





☀️ LESS BRIGHT —————> MORE BRIGHT ☀️

LEAST EFFICIENT



MOST EFFICIENT

	450 lumens	800 lumens	1100 lumens	1600 lumens	
 <b>Standard Incandescent</b>	<b>40W*</b> \$5/yr**	<b>60W</b> \$8/yr	<b>75W</b> \$10/yr	<b>100W</b> \$13/yr	<b>RATED LIFE</b> 1 year***
↓	↓	↓	↓	↓	
 <b>Efficient Incandescent</b>	<b>29W</b> \$4/yr	<b>43W</b> \$6/yr	<b>53W</b> \$7/yr	<b>72W</b> \$10/yr	<b>RATED LIFE</b> 1-2 year
 <b>CFLs</b>	<b>10W</b> \$1/yr	<b>13W</b> \$1.75/yr	<b>16W</b> \$2/yr	<b>20W</b> \$3/yr	<b>RATED LIFE</b> 6-10 years
 <b>LEDs</b>	<b>5W</b> \$0.67/yr	<b>10W</b> \$1/yr	<b>15W</b> \$2/yr	<b>19W</b> \$2/yr	<b>RATED LIFE</b> 15-25 years

\*Energy use \*\*Average national energy cost per year \*\*\*Based on 3 hour of use per day

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Rank	Website	Twitter	Site Score
1	<a href="http://www.apartmenttherapy.com">www.apartmenttherapy.com</a>	@ApTherapy	19167.68
2	<a href="http://www.home-designing.com">www.home-designing.com</a>	@Homedesigning	9429.15
3	<a href="http://www.designsponge.com">www.designsponge.com</a>	@Designsponge	2977.75
4	<a href="http://cotedetexas.blogspot.com">cotedetexas.blogspot.com</a>	@Cotedetexas	2520.67
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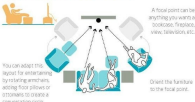


# LIVING ROOM

## Layout Guide

The living room is one of the most used rooms and space has to be designed according to the personal needs of its users. Here are the five typical floor plans, each of which fits a different and specific goal.

### EMPHASIS ON FOCAL POINT



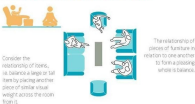
### EMPHASIS ON CONVERSATION



### KIDS-FRIENDLY



### EMPHASIS ON VISUAL BALANCE

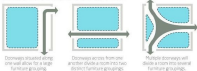


### EMPHASIS ON ALIGNMENT OR SYMMETRY



### TIPS

- Furniture must always follow function.
- Keep the room balanced by mixing solid, heavy pieces with light, airy furniture.
- Use empty space as part of the design scheme.
- Consider the traffic. Keep the traffic flow through the room.



- Earthy browns and tans, reflecting many aspects of nature, are always trendy.
- Brightly colored artwork is making a statement when adorning over neutral color walls.
- Eco-friendly materials are gaining ground all of the house but particularly in the living rooms.
- Vintage and modern furniture, accessories and fixtures may combine into harmonious designs.

### Sources

- <http://graphics.danfordmiller.com/interior/furniture/layout1.pdf>
- [http://interiorinspiration.com/articles\\_for/Arranging\\_Living\\_Room\\_Furniture](http://interiorinspiration.com/articles_for/Arranging_Living_Room_Furniture)
- <http://www.roma.com/10-guides-to-the-living-room-which-2005-Magnum-Decorated-2012>
- <http://www.roma.com/10-guides-to-the-living-room-which-2005-Magnum-Decorated-2012>
- <http://www.roma.com/10-guides-to-the-living-room-which-2005-Magnum-Decorated-2012>

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# INTERIOR DESIGN TIMELINE



## Stone Age 6000 - 2000BC

The first evidence of interior design was the use of natural materials like stone and wood. They were used to create simple, functional spaces.

## Neolithic Europe 2000 - 1700BC

Neolithic people used natural materials like stone and wood to create simple, functional spaces.

## Roman 250BC - 400AD

Romans brought the concept of interior design to Europe. They used natural materials like stone and wood to create simple, functional spaces.

## Dark Ages 500 - 1100AD

During the dark ages, there was a decline in interior design. People used natural materials like stone and wood to create simple, functional spaces.

## Renaissance 1400 - 1600AD

During the Renaissance, the focus was on the human body. People used natural materials like stone and wood to create simple, functional spaces.

## Baroque 1590 - 1725AD

Baroque style was characterized by its dramatic use of light and shadow. People used natural materials like stone and wood to create simple, functional spaces.

## Traditional 1700AD - Now

Traditional interior design was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Industrial Revolution 1760 - 1820AD

During the Industrial Revolution, interior design was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Tropical 1800s - Now

As the British empire grew, people began to use natural materials like stone and wood to create simple, functional spaces.

## Victorian 1837 - 1901AD

Victorian style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Arts & Crafts 1860 - 1910AD

As a reaction to the Industrial Revolution, people began to use natural materials like stone and wood to create simple, functional spaces.

## Asian 1900s - Now

Asian style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Colonial Revival 1905 - Now

As the British empire grew, people began to use natural materials like stone and wood to create simple, functional spaces.

## Country 1920s - 1970s

Country style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Art Deco 1920s - 1940s

Art Deco was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Transitional 1950s - Now

Transitional style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Contemporary 1980s - Now

Contemporary style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Egyptian 2700 - 300BC

With the advent of Egypt, interior design was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Greek 1200 - 318BC

The Greeks brought the concept of interior design to Europe. They used natural materials like stone and wood to create simple, functional spaces.

## Byzantine 500 - 1500AD

Byzantine style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Gothic 1140 - 1400AD

Following the dark ages, there was a decline in interior design. People used natural materials like stone and wood to create simple, functional spaces.

## Baroque 1590 - 1725AD

Baroque style was characterized by its dramatic use of light and shadow. People used natural materials like stone and wood to create simple, functional spaces.

## Rococo Style 1700AD

A very elegant style, Rococo was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Neoclassical Style 1780 - 1830AD

Neoclassical style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Aesthetic Movement 1800s

The Aesthetic Movement was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Tuscan 1840s - Now

Inspired by the style and culture of Tuscany, the Tuscan style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Rustic 1800s - Now

Rustic style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Art Nouveau 1890 - 1910AD

Art Nouveau was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Eclectic 1900s - Now

The eclectic style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Modern 1918 - 1950

Modern style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Mediterranean 1920s - Now

Mediterranean style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

## Mid-Century Modern 1930s

Mid-century modern style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

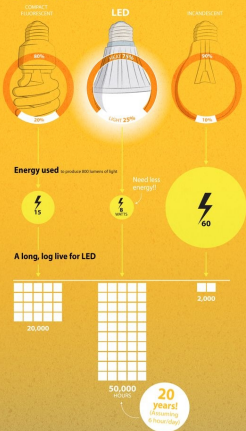
## Contemporary 1980s - Now

Contemporary style was characterized by its use of natural materials like stone and wood. People used natural materials like stone and wood to create simple, functional spaces.

# What LED Technology Can do for your wallet

LED technology is being used since the mid twentieth century in electronic devices like tv remote controls, appliances, cell phones or music devices. **LED bulbs** are the most recent use of this technology and in the future they will replace incandescent and fluorescent bulbs thanks to their **more efficient and long lasting technology.**

## LEDs use less energy and produce less heat



## What more can they do for you?



**...RE MORE ECO-FRIENDLY**  
LED bulbs don't contain toxic mercury. They also reduce your CO<sub>2</sub> emissions.



**...SPEND LESS ON BULBS**  
LED bulbs are far more durable than other kinds of bulbs because solid state LED technology is vibration and impact resistant.



**...DIRECT LIGHT EFFICIENTLY**  
LED bulbs produce highly directional light, sending all the light exactly where it's needed. More control over beam direction means less wasted light.



**...STOP INFRARED AND ULTRAVIOLET EMISSIONS**  
Ultraviolet radiation can cause cell damage. Also artworks and other sensitive items are not damaged for being exposed to ultraviolet radiation.

## Where do we use LED lamps?



**BRIGHT  
IDEAS** FOR LIGHTER ENERGY BILLSWhich **Light** Is **Right** For YouHalogen  
IncandescentEnergy Star  
CFLEnergy Star  
LEDHOW  
THEY  
WORK

Electricity passes through a metal filament until heat makes it glow, and a gas-filled, coated capsule surrounds the filament to keep it hot with less energy.

Electricity passes through a gas-filled tube to produce ultraviolet light. A fluorescent coating inside the tube, phosphor, makes the light visible.

Light-emitting diodes are small light sources illuminated by the passage of electrons through semiconductor material.

## DIMMABLE



Yes



Some



Yes

ESTIMATED  
ANNUAL  
COST\*ENERGY  
SAVINGS\*\*BULBS  
REQUIRED  
FOR 50,000  
HOURS OF  
LIGHT\*\*\*

\* To operate 60-watt bulbs, based on 2 hours/day of use

\*\* Over traditional incandescent

\*\*\* Varies by specific lamp type

\*\*\*\* High-power white LEDs

Sources: U.S. Department of Energy, U.S. Environmental Protection Agency

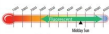
# Choosing a Light Source

Ever stalled while shopping for lighting, staring blankly at what seems like hundreds of options? You're not alone. Use this infographic for an easy, comprehensive guide on the most popular light sources. You can compare lifetime, color temperature, pros & cons, and more.

## Fluorescent



When electricity passes through mercury vapor in a glass tube, the invisible light given off interacts with the coating in the glass and produces visible light.



Color Temperature

### PROS

Efficient  
Bright  
Newer models give off warm white light  
Emits little heat

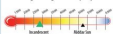
### CONS

Rarely dimmable  
Old models give off gray-green light  
Contains mercury

## Incandescent



When electricity passes through a metal filament to the point of "incandescence", the filament gives off light as well as plenty of heat.



Color Temperature

### PROS

Inexpensive  
Dimmable  
Warm light

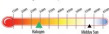
### CONS

Emits lots of heat  
Energy suckers  
Short lifetime

## Halogen



Similar to incandescent, except that a small amount of a halogen gas has been added to the inside of the glass envelope.



Color Temperature

### PROS

Dimmable  
Easily focused  
Compact  
Great for lighting art

### CONS

Touching bulb lowers life  
Emits lots of heat



New fluorescents with new coatings give fluorescent lights a MUCH more flattering glow.



Halogens have become increasingly popular because of their ability to light well.

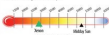


The "daylight" varieties (with a bluish tint) are closer to outdoor light than typical incandescent light bulbs.

## Xenon



Very similar to incandescent, except a small amount of xenon gas has been added to the inside of the glass envelope.



Color Temperature

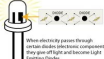
### PROS

Dimmable  
Warm light  
Lasts longer than incandescent

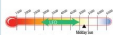
### CONS

Emits some heat  
Not very efficient

## LED



When electricity passes through certain diodes (electronic components), they give off light and become Light Emitting Diodes.



Color Temperature

### PROS

Long-lasting  
Ultra-efficient  
Inexpensive operation  
Emits minimal heat

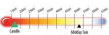
### CONS

Rarely dimmable  
Expensive to purchase  
Technology still evolving

## Candle



Cloth wick surrounded by wax has a small burning flame that often "flickers".



Color Temperature

### PROS

Flattering  
Zero electricity

### CONS

Fire hazard  
Needs frequent replacements



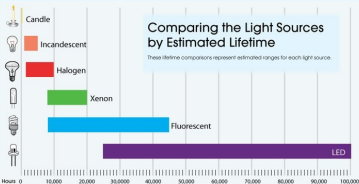
Xenon fixtures are becoming VERY popular for under cabinet lighting.



LEDs are becoming a standard in our dashboards, traffic lights, and taillights; home LEDs often require extra parts to operate.



Almost everyone looks better in candlelight.



## Comparing the Light Sources by Estimated Lifetime

These lifetime comparisons represent estimated ranges for each light source.

## Which light to choose?

Now that you are familiar with each light source, the next step is to choose the best type of light to use for your project.

### Choose Fluorescent...

When you want to be blown away by the amount of light output generated by very little electricity. If you're looking for low-profile, very bright, long-lasting lights, go with fluorescent.

### Choose Halogen...

When you need crisp lighting that renders colors perfectly. Often the light source of choice for illuminating artwork and displays, and very popular in recessed lighting.

### Choose Incandescent...

When you want to stick with what you know best. Also, incandescent light bulbs are available in decorative styles (i.e. clear globes) that you can't always find in other light sources.

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When you want the "warm look" of incandescent lighting but would prefer a bit more efficiency in your light source. Very popular in under cabinet lighting; plus, xenon is dimmable which is a great benefit.

### Choose LED...

When you want your light to be ultra-energy efficient, long-lasting, and cool to the touch. It seems like every day there are more and more choices in LED lighting so it is probably a good idea to look at your LED options for your situation.

### Choose a Candle...

When you're going for romantic appeal - or pretending you live in the 19th century.

# DON'T BE LEFT IN THE DARK

As of January 1, 2014, traditional 40- and 60-watt incandescent light bulbs have been phased out. Lutron Electronics asked people if they feel "in the dark" about light bulb options, as well as how important dimmable bulbs and dimmers are. The stats are illuminating:



Traditional incandescent light bulbs have been phased out

**FEWER THAN 1 IN 3**

adults **KNOW** about the phase out



**1 IN 10**

adults feel **VERY KNOWLEDGEABLE** about bulb options after the phase out



CFL



LED

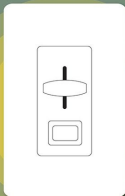


Halogen

**NOT ALL BULBS ARE DIMMABLE**

**MOST ADULTS (72%)** **DON'T REALIZE** that **NOT ALL** CFL and LED bulbs are dimmable

**DIMMABLE LIGHT BULBS** are **IMPORTANT** to **3/4** of those surveyed



Roughly **3 in 4** have dimmers in their homes

**WHERE**

people would like to use a dimmer

**60%**



LIVING/  
FAMILY ROOMS

**52%**



BEDROOMS

**43%**



DINING ROOMS

**WHY**

people have dimmers

**ENERGY/  
COST SAVINGS** **66%**

**AMBIANCE** **59%**

**EASIER ACCESS  
TO DARK ROOMS** **39%**

**SAFETY** **25%**

To learn more about LED, CFL and halogen light bulbs, as well as compatible dimmer options, visit:

[Lutron.com/dimCFLLED](http://Lutron.com/dimCFLLED)

 **LUTRON®**

This survey was conducted online within the United States by The Futures Company, on behalf of Lutron, from November 25 - 29, 2013 among 1,000 adults, ages 18 and older.

# What's in a light bulb?

Say good-bye to your old light bulbs. That familiar incandescent invention of Edison is being phased out, replaced by more, more energy-efficient bulbs. So as you gradually replace them with compact fluorescent lights (CFLs) and light-emitting diodes (LEDs), know that you'll actually be saving money on your electric bill.

## WHAT IS THE LIGHT OUTPUT PER BULB?

### INCANDESCENT BULBS



300  
TO  
900

LIGHT OUTPUT  
(IN LUMENS)

### CFL BULBS



300  
TO  
900

LIGHT OUTPUT  
(IN LUMENS)

### LED BULBS



1,000  
TO  
1,300

LIGHT OUTPUT  
(IN LUMENS)

#### What's in a lumen?

Imagine the number of incandescent bulbs you have when you turn on a light. The more light bulbs you have, the brighter the light. Imagine a normal room, and for a bulb that's 300 lumens.



## HOW MANY WATTS PER BULB?

60 WATTS  
PER BULB

14 WATTS  
PER BULB

10 WATTS  
PER BULB



## WHAT'S THE PROJECTED LIFESPAN OF A BULB?



1,200 hours  
per bulb



10,000 hours  
per bulb



50,000 hours  
per bulb



## CARRYING TERMINOLOGY

With incandescent bulbs, we used  
watt to compare intensity of light.  
So, a 100-watt bulb is brighter  
than a 60-watt bulb.



But watt is a unit of power, not  
brightness. These incandescent  
bulbs convert only about 5% of  
the energy they use into light.

Lumens are a better measure  
of brightness. A better kind  
of measure for light perceived  
by your eye.



Available LED bulbs may only  
emit 10 watts of energy, if can  
glow up to 900 brighter than a  
60-watt incandescent bulb.

## COST OF LIGHTING

### Cost per bulb:



INCANDESCENT: \$1.25  
CFL: \$3.95  
LED: \$25.95

20%

Replace all LED bulbs for free,  
decreasing by about 20% each year.  
Some states predict the price will  
fall to a price by 2015.

### Bulbs needed for 50k hours of use:



INCANDESCENT: 42  
CFL: 5  
LED: 1

### Equivalent 50k hours bulb expense:



### Kilowatt-hours of electricity used over 50,000 hours:



INCANDESCENT: 3,000  
CFL: 700  
LED: 300-500

### Cost of Electricity (\$0.10 per kWh):

INCANDESCENT: \$300.00  
CFL: \$70.00  
LED: \$30.00



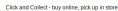
### Total cost for 50k hours:

INCANDESCENT: \$332.50  
CFL: \$89.75  
LED: \$65.75

## PHASING OUT INCANDESCENT BULBS



Debated by the Energy Independence and  
Security Act of 2007, incandescent light bulbs  
must use 30% less energy by 2014. So, starting  
in 2009, manufacturers started phasing out  
100-watt incandescent bulbs, followed by 75-watt  
bulbs in 2012 and 40- and 60-watt bulbs in 2014.



LIGHTING: Smart lighting | Ceiling lights | Table lamps | Floor lamps | Work lamps | Shades, bases & cords | Integrated lighting | Spotlights | Wall lamps | Children's lighting  
LED Light bulbs | Cords & chargers | LED lights | Decorative lighting | Outdoor lighting | Bathroom lighting | Children's lighting 8-12 | Series

How much light do you want?

Lumens (lm) measure light output. A 400 lm LED bulb gives the same light output as a 35W incandescent bulb. But it uses only 6.3W of energy. We have light sources in 80 lm, 100 lm, 200 lm, 400 lm, 600 lm, 1000 lm and 1800 lm.

### Power consumption

LED bulbs use much less energy compared to the old incandescent types. So you can choose them by light output – in LUMEN – rather than by power consumption (W). Watts measures the power consumption. Our light bulbs consumes from 1.8-27W.

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[Privacy policy](#)[Read more about cookies](#)

Check the fitting!



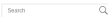
**Want a warmer or a cooler light?**

LED bulbs containing more red portion in the spectrum provide a warmer light, that's good for relaxing or as general light. Cooler light is good for working or as focus light. 2700 Kelvin corresponds to the color of the old incandescent light bulbs.



## Features

Think about where you'll use it. Most LED bulbs are dimmable, RYET are non-dimmable and all TRÅDFRI are wirelessly dimmable. For spots you usually use a bulb with beam angle. Bulbs with wider beams give a general light, while bulbs with narrow beams give a directed light. Candle-shaped bulbs direct the light better in, for example, a lamp with a long shade.



NEA / Lighting / Find the right light bulb

ALL DEPARTMENTS:

- Bathrooms
- Bedrooms
- Children's
- Cooking
- Decorations
- Dining
- Eating
- Food





- Halfway
- Home electronics
- Home improvement
- Kitchen & appliances
- Kitchens
- Laundry
- Lighting
- Living room

- Office furniture
- Outdoor Furniture
- Pets
- Secondary storage
- Small storage
- Textiles & Rugs
- Leisure & Safety
- For business

Summer  
Winter holidays

Coaching & Resources	Need/Help	Delivery Information	Highlight Info	This is KEA	Jobs at KEA	Plumtree
Request	FAQ	Delivery	Planning KEA Store	The KEA Concept		Test/Feedback
View Online	Contact Us	Post/Inflight Delivery	All Products	Domestic Design		
Buying Guides	Feedback	Track on Order	Planning Tools	About/In-KEA Group		
Request	Return Policy	Delivery Terms & Conditions	KEA Food & Restaurant	People & Planet		
View Online	Contact Us	Delivery	Planning KEA Store	The KEA Concept		Test/Feedback
Buying Guides	Feedback	Post/Inflight Delivery	All Products	Domestic Design		
	Return Policy	Track on Order	Planning Tools	About/In-KEA Group		
	Children's Product	Delivery Terms & Conditions	KEA Food & Restaurant	People & Planet		
	Registration		Warranties	Press Room		
			KEA Services	Press our Materials		
			KEA Gift Card	KEA Foundation		



EFFICIENCY	Least		Most	
BULB TYPE				
LUMENS	STANDARD	HALOGEN	CFL	LED
450	40 W	29 W	9 W	8 W
800	60 W	43 W	14 W	13 W
1100	75 W	53 W	19 W	17 W
1600	100 W	72 W	23 W	20 W
RATED LIFE	1 year	1-3 years	6-10 years	15-25 years
SAVINGS	✗	up to 30%	up to 75%	up to 80%



Download from  
Dreamstime.com

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ID 40032622

Alhovich | Dreamstime.com

# ENERGY SAVING BULB COMPARISON

LUMENS  
(BRIGHTNESS)

INCANDESCENT  
(OLD BULB)

HALOGEN

DECORATIVE/  
STICK & SPIRAL  
CFL

LED

SAVINGS BY  
CHANGING TO  
LED \*

1500

1400

1300

1200

1100

1000

900

800

700

600

500

400

300

200

100



100w 1300Lm



75w 1300Lm



21w 1300Lm



18w 1450Lm

£12.30



60w 710Lm



15w 845Lm



10w 820Lm

£7.50



40w 415Lm



GU10 - 50w 340Lm



20w 260Lm

GU4

10w 100Lm



GU10 - 7w 470Lm

£6.45

\*Based on 1000  
hours per annum

POOR

EFFICIENCY

GOOD

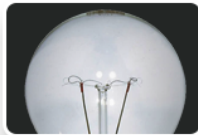
**ESPAES**  
THE LIGHT PARTS STORE

# How to Buy a LED Bulb?

**LUMENS: The new way of looking at light.**

1

You used to buy these



**INCANDESCENT  
BULBS**

WATTS
Less than 40w <a href="#">CLICK HERE</a>
40w <a href="#">CLICK HERE</a>
60w <a href="#">CLICK HERE</a>
75w <a href="#">CLICK HERE</a>
100w <a href="#">CLICK HERE</a>
150w <a href="#">CLICK HERE</a>

Average  
Rated Life

1000 hr

2

You want this much light



**LUMENS**

Less than 450Lm <a href="#">CLICK HERE</a>
450 Lm <a href="#">CLICK HERE</a>
800 Lm <a href="#">CLICK HERE</a>
1100 Lm <a href="#">CLICK HERE</a>
1600 Lm <a href="#">CLICK HERE</a>
2600 Lm <a href="#">CLICK HERE</a>

3

Now you can buy these



**LED**

**MOST EFFICIENT**

WATTS
Under 3w <a href="#">CLICK HERE</a>
3w - 6w <a href="#">CLICK HERE</a>
6w - 9w <a href="#">CLICK HERE</a>
10w - 15w <a href="#">CLICK HERE</a>
16w - 20w <a href="#">CLICK HERE</a>
21w - 30w <a href="#">CLICK HERE</a>

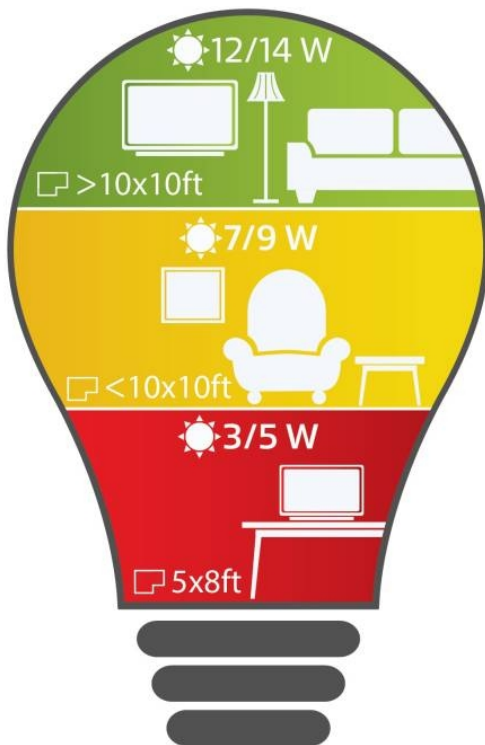
30,000 hr

Average  
Rated Life

**CLICK ON YOUR DESIRED WATTAGE**  
**MORE LUMENS = MORE LIGHT**

Actual lumen output may vary by product. Revised April 2016

## *Different room. Different needs. Different bulbs*



LED WATTAGE



ROOM SIZE

## Bulbs buying guide

A SE



A11

CA S



CA5

R SE



R12

G SE



G9

BT S



BT15

PAR



PAR14

LINE



**A SERIES**

A15 A17 A19 A20 A21 A23

**PS SERIES**

PS25 PS35

**B SERIES**

B8 B10 B11 B13

**C SERIES**

C6 C7 C9 C11 C15

**CA SERIES**

CA5 CA7 CA8 CA10 CA11

**RP & S SERIES**

RP11 S6 S8 S11 S14 S18

**F SERIES**

F10 F15 F20

**PRISM**

PRISM

**R SERIES**

R12 R14 R16 R20 R25 R30 R40

**MR SERIES**

MR8 MR11 MR16 MR20

**BR SERIES**

BR25 BR30 BR38 BR40

**G SERIES**

G9 G11 G12 G16 G16½ G19 G25 G30 G40

**T SERIES**

T3 T4 T4½ T5 T5½ T6 T6½ T7 T7½ T8 T9 T10 T14 T20

**BT SERIES**

BT15 BT28 BT37 BT56

**E SERIES**

E17 E18 E23½ E23 E37 E25 ED17

**ED SERIES**

ED18 ED23 ED23½ ED28 ED37

**AR SERIES**

AR70 AR111

**PAR SERIES**

PAR14 PAR16 PAR20 PAR30 Short Neck PAR30 Long Neck PAR36 PAR38 PAR46 PAR56 PAR64

**SPECIALTY**

JC Bi-Pin Wedge Festoon Rigid Loop

**LINESTRA**

T10

**LINEAR FLUORESCENTS**

T2 T4 T5 T8 T12

**COMPACT FLUORESCENT COILS**

T2 Coil T3 Coil T4 Coil

**COMPACT FLUORESCENT PLUG IN LAMPS**

Twin Tube Triple Tube Quad Tube

# Choosing a Light Source

Ever stalled while shopping for lighting, staring blankly at what seems like hundreds of options? You're not alone. Use this infographic for an easy, comprehensive guide on the most popular light sources. You can compare lifetime, color temperature, pros & cons, and more.

## Fluorescent



When electricity passes through mercury vapor in a glass tube, the invisible light given off interacts with the coating in the glass and produces visible light.

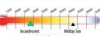


PROS	CONS
Efficient Bright Newer models give off warm white light Emits little heat	Rarely dimmable Old models give off gray-green light Contains mercury

## Incandescent



When electricity passes through a metal filament to the point of "incandescence," the filament gives off light as well as plenty of heat.

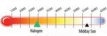


PROS	CONS
Inexpensive Dimmable Warm light	Emits lots of heat Energy suckers Short lifetime

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PROS	CONS
Dimmable Easily focused Compact Great for lighting art	Touching bulb lowers life Emits lots of heat



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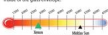


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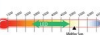


PROS	CONS
Dimmable Warm light Lasts longer than incandescent	Emits some heat Not very efficient

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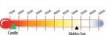


PROS	CONS
Long-lasting Ultra-efficient Inexpensive operation Emits minimal heat	Rarely dimmable Expensive to purchase Technology still evolving

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Cloth wick surrounded by wax has a small burning flame that often "flickers."



PROS	CONS
Flattering Zero electricity	Fire hazard Needs frequent replacements



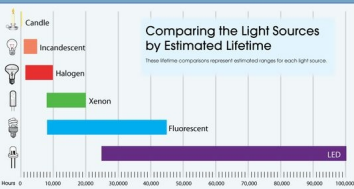
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### Choose a Candle...

When you're going for romantic appeal - or pretending you live in the 19th century.

# Color Temperature Chart

www.shorescanada.com



## INDOOR Artificial Light

5,500-10,500°K

- LCD's
- CRT's



6,000°K

- Mercury Vapor Light



5,500°K

- Electronic Flash
- Daylight Metal Halide (HMI)



4,200°K

- Cool White Fluorescent (CFL)



4,000°K

- Standard Clear Metal Halide



3,200-3,500°K

- Quartz Lights
- Warm Metal Halide



3,000°K

- Halogen Light



2,500-2,900°K

- Household Tungsten
- Standard Incandescent



2,200°K

- High Pressure Sodium



1,850-1,930°K

- Candle Light



1,700-1,800°K

- Match Flame



## OUTDOOR Shade and Sun

10,000°K +

- Blue Sky
- Skylight

7,500°K

- Shade from blue Sky

7,000-8,000°K

- Shade on clear Day

6,000-7,000°K

- Cloudy Sky
- Shade from Clouds
- Shade in Daylight

5,300-5,500°K

- Average Noon (Northern Hemisphere)

5,000°K

- Late Morning
- Early Afternoon

4,500°K

- Mid Morning
- Mid Afternoon

4,000°K

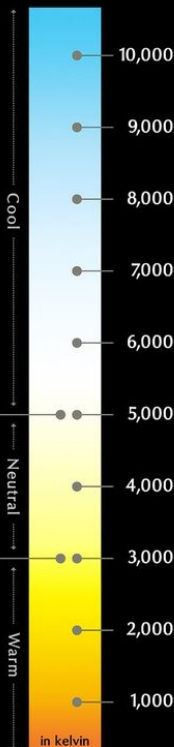
- Late Afternoon

3,500°K

- Early Morning
- Evening

2,000-3,000°K

- Sunrise
- Sunset



## Canon EOS



☐ 7,000°K Shade

☐ 6,000°K Flash Use

☐ 6,000°K Cloudy, Twilight, Sunset

☐ 5,200°K Daylight

☐ 4,000°K White Fluorescent Light

☐ 3,200°K Tungsten Light

☐ 3,000- 7,000°K Auto Setting

☐ 2,500-10,000°K Color Temperature

☐ 2,000-10,000°K Custom Setting

# What do colours mean?

## Interior Design: Colours

### Introduction

👉 Colour can seriously effect our moods and decisions. That's a fact. Born from both nature and nurture, our awareness of colour can naturally influence, or be used to influence us on a daily basis.

So what do colours mean exactly?



### Red

★ Naturally Red means 'DANGER!' - Being associated with both fire and blood, this can be seen in it's use of 'Stop' signs and traffic signals. Other than that, modern humans have been conditioned to associate Red with retail sales and certain brands.

Top Tip

Use Red sparingly when decorating; only painting one wall or chimney breast as Red can be an overpowering colour.

★ Orange represents a bright, youthful and fun colour. Depending on the tone, Orange can bring on a number of feelings in humans. These feelings range from warmth to associations with the Autumn season.

### Orange

Top Tip

Use Orange to highlight specific features, such as tiling, individual drawers or cupboard doors.

### Yellow

★ Yellow is by far the brightest colour you can get your hands on. Yellow instinctively reminds us of our Sun, and is associated with summer, freshness and youthfulness. In nature Yellow can mean danger, just look at the number of animals which use Yellow as a warning as evidence for this fact.

Top Tip

Use Yellow to decorate a child's bedroom. Take note: Yellow can get dirty fairly quickly, so perhaps decorate above a Dado rail if you have young children.

★ Green is one of the most natural colours, used by companies and environmental campaigners, these days Green is taken as meaning 'environmentally friendly' or 'healthy'. To the individual Green can be a colour that calms and soothes, bringing peace and wellbeing.

### Green

Top Tip

Green can be used to bring a natural feel to your room, contrasting well with existing wooden features and aspects. This can give a calm overall atmosphere, perfect for a bedroom.

### Blue

★ Blue is by far the most calming of all the colours, and suggests a feeling of trust and loyalty. It's for this reason perhaps that it's so popular with companies and institutions such as hospitals. Both the sky and sea are blue in colour, and both are used to represent

Top Tip

Blue can be used to create a calm atmosphere in your home, bringing the shade darker can give your room a cosy feel during the darker months.

★ It is perhaps because it was the colour of the Caesars during the Roman period that Purple has come to mean wealth, royalty and power. Wisdom and mystery also come hand in hand with these traits, because of the overruling power and mystifying nature of nobility.

### Purple

Top Tip

Purple can supplement a passively decorated room. This is especially true in the form of soft furnishings like cushions, and accessories such as lamp shades.



## Using Color Psychology in Your Home

Color, much like music, can alter your mood and behavior. Smart use of color can help you accomplish a variety of different things in your home.



### Color psychology

#### What is it?

Color psychology is the study of color as a factor in human behavior, ranging from measuring individual color preference to investigating the relationship between color and the ways people react in certain situations.



#### Placebo effect

The color of placebo pills is reported to be a factor in their effectiveness, with "hot-colored" pills working better as stimulants while "cool" colored pills work better as depressants. This is probably due to the patient's expectations and cultural backgrounds.

#### Chromotherapy

Chromotherapy is a form of alternative medicine that is based on the hypothesis that distinct colors have health effects, unrelated to the placebo effect. Skeptics regard it as pseudoscience.

#### The color wheel: Interior designer's tool



- raises blood pressure, speeds respiration and heart rate
- slows them down
- heats the lungs



- stimulates the nerves



- is most restful for the eyes
- is most fatiguing for the eyes



- helps with fertility



### Interior design and color

#### Which colors should go in certain rooms

Colors affect people in many ways, depending upon one's age, gender, ethnic background or local climate. Room color can influence our mood and our thoughts. Choosing the right shade and tone according

to one's likings and personality is more important than fashion, that comes and goes. The amount of color used is also important; whether its a main color or just an accent, its importance is not to be ignored.



#### Some tips



color can change shape and size of furnishings



color can make a room seem big or small



neutrals are flexible and calm things down



color makes people look and feel better



colors have a psychological value

### Choosing the exterior color



Look at the colors of neighboring houses and at the surroundings and choose colors that harmonize, yet stand out from the crowd.



The exterior color of houses selling most quickly is a certain shade of pale, sunny yellow. Choosing the wrong shade can kill a sale.



For a fast sale choose fun colors and go for three, or even four, exterior colors. This will add definition to the architectural details.



Houses in the lower price range sell faster and for higher prices when painted in simple colors like yellow or tan, accented by white, blue, or green trim.



Sophisticated colors, with complex shades, with tints of gray or brown, attract wealthy or highly-educated buyers and are fit for houses in a higher price range.



Repeating shades of the exterior throughout your home will make the entire home seem to be in harmony and will increase your selling chances.



Lighter exterior colors make small houses look bigger.



Houses with blue, green, or gray exteriors sell better during spring and summer.



Warm exterior colors, such as yellows, reds, and maroons, sell better in the fall and winter.

# WHAT BULB

## DO I NEED?

### SHAPES

The most common incandescent light bulb shapes around the home are globe, appliance and decorative candle or flame. This is indicated in the bulb name, for example G25 and the slightly bigger G40.

INCANDESCENT BULBS  
PRODUCE A WARM,  
YELLOW-WHITE LIGHT

### FITTINGS

If the bulb name begins with a B or E, it is most likely referring to the fitting. Bayonet (B) and Edison screw (E) fittings are popular as are pins and twist locks.



BAYONET



SCREW

### SPECIALIST FITTINGS

For directional spotlights, bathroom mirror lights and unusual light fittings, you may need something a little different from the standard light bulb.

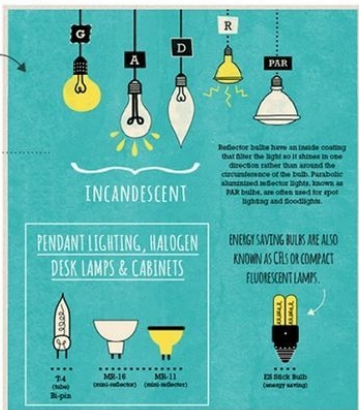
PAR 16, 20, 30, 36 & 38 : These are used for spot lighting and floodlights.



T3 & T4: Used for wall lights, floor lamps and ceiling pendants.

## LIGHT BULB GUIDE

From energy saving bulbs to LEDs and bayonets to bi-pins, often choosing the correct light bulbs for your home can be more complicated than changing them. That's why we've created this handy "how to" guide packed with information on the different kinds of light bulbs available. You'll know your watts from your lumens and be an expert on Edison screws in no time...



### LIFE SPANS

Compact fluorescent (CFL)  
8,000 - 10,000 hours  
Light-emitting diode (LED)  
30,000 - 50,000 hours  
Incandescent  
1,000 - 2,000 hours

### LUMEN

The amount of light emitted by the bulb - more lumens mean more brightness.

### WATT

The amount of energy required to power a bulb to its quantified brightness.

### SIZE

The size is the number next to the bulb and the larger the number the bigger the bulb (i.e. G4, G5, G9). Letters refer to the base type and numbers refer to diameter of base.

### COLOUR

The colour is shown by the letter, C for cool, W for warm, WW warm white, CW cool white, D for Daylight, IF for Incandescent Fluorescent, N for Natural White and also clear, pearl finish.

$$40 \text{ W} = 450 \text{ LM}$$

Follow us



next

**A SERIES**

A15 A17 A19 A20 A21 A23

**PS SERIES**

PS25 PS35

**B SERIES**

B8 B10 B11 B13

**C SERIES**

C6 C7 C9 C11 C15

**CA SERIES**

CA5 CA7 CA8 CA10 CA11

**RP & S SERIES**

RP11 S6 S8 S11 S14 S18

**F SERIES**

F10 F15 F20

**PRISM**

PRISM

**R SERIES**

R12 R14 R16 R20 R25 R30 R40

**MR SERIES**

MR8 MR11 MR16 MR20

**BR SERIES**

BR25 BR30 BR38 BR40

**G SERIES**

G9 G11 G12 G16 G16½ G19 G25 G30 G40

**T SERIES**

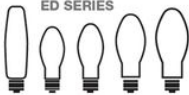
T3 T4 T4½ T5 T5½ T6 T6½ T7 T7½ T8 T9 T10 T14 T20

**BT SERIES**

BT15 BT28 BT37 BT56

**E SERIES**

E17 E18 E23½ E23 E37 E25

**ED SERIES**

ED17 ED18 ED23 ED23½ ED28 ED37

**AR SERIES**

AR70 AR111

**PAR SERIES**

PAR14 PAR16 PAR20 PAR30 Short Neck PAR30 Long Neck PAR36 PAR38 PAR46 PAR56 PAR64

**SPECIALTY**

JC Bi-Pin Wedge Festoon Rigid Loop

**LINESTRA**

T10

**LINEAR FLUORESCENTS**

T2 T4 T5 T8 T12

**COMPACT FLUORESCENT COILS**

T2 Coil T3 Coil T4 Coil

**COMPACT FLUORESCENT PLUG IN LAMPS**

Twin Tube Triple Tube Quad Tube

**SCR**

E10 M Screen

**SPEC**

Medi Side P

**BI PI**

4mm G4

**COM**

G24q



2G

**FILA**

Flicker

**NOTE:**  
C (coil)  
CC (coil)

## SCREW BASES

## TWIST & LOCK BASES



## SPECIALTY BASES

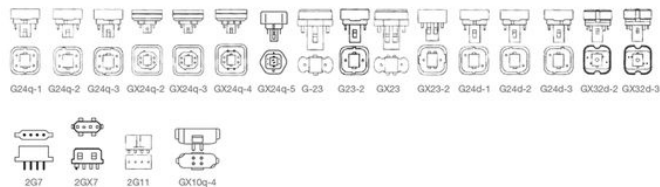


## BI PIN BASES

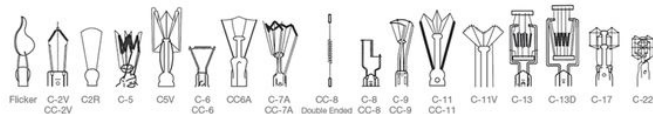
## FLUORESCENT PIN BASES



## COMPACT FLUORESCENT PLUG IN LAMP BASES



## FILAMENTS



### NOTE:

C (coiled) - Filament wire is wound into a helical coil or is deeply fluted.

CC (coiled coil) - Filament wire is wound into a helical coil and this coiled wire is wound again into a helical coil.

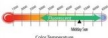
# Choosing a Light Source

Ever stalled while shopping for lighting, staring blankly at what seems like hundreds of options? You're not alone. Use this infographic for an easy, comprehensive guide on the most popular light sources. You can compare lifetime, color temperature, pros & cons, and more.

## Fluorescent



When electricity passes through mercury vapor in a glass tube, the invisible light given-off interacts with the coating in the glass and produces visible light.

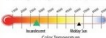


PROS	CONS
Efficient Bright Newer models give off warm white light Emits little heat	Rarely dimmable Old models give off gray-green light Contains mercury

## Incandescent



When electricity passes through a metal filament to the point of "incandescence", the filament gives off light as well as plenty of heat.

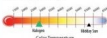


PROS	CONS
Inexpensive Dimmable Warm light	Emits lots of heat Energy suckers Short lifetime

## Halogen



Similar to incandescent, except that a small amount of a halogen gas has been added to the inside of the glass envelope.



PROS	CONS
Dimmable Easily focused Compact Great for lighting art	Touching bulb lowers life Emits lots of heat



New fluorescents with new coatings give fluorescent lights a MUCH more flattering glow.



Halogens have become increasingly popular because of their ability to light well.

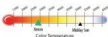


The "Daylight" varieties (with a bluish tint) are closer to outdoor light than typical incandescent light bulbs.

## Xenon

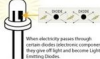


Very similar to incandescent, except a small amount of xenon gas has been added to the inside of the glass envelope.



PROS	CONS
Dimmable Warm light Lasts longer than incandescent	Emits some heat Not very efficient

## LED



When electricity passes through certain diodes (electronic components), they give off light and become Light Emitting Diodes.

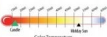


PROS	CONS
Long-lasting Ultra-efficient Inexpensive operation Emits minimal heat	Rarely dimmable Expensive to purchase Technology still evolving

## Candle



Cloth wick surrounded by wax has a small burning flame that often "tickers".



PROS	CONS
Flattering Zero electricity	Fire hazard Needs frequent replacements



Xenon fixtures are becoming VERY popular for under cabinet lighting.



LEDs are becoming a standard in car dashboards, traffic lights, and tailights; home LEDs often require extra parts to operate.



Almost everyone looks better in candlelight.



Candle



Incandescent



Halogen



Xenon



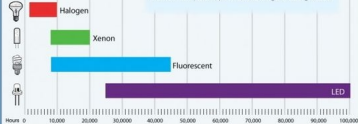
Fluorescent



LED

## Comparing the Light Sources by Estimated Lifetime

These lifetime comparisons represent estimated ranges for each light source.



## Which light to choose?

Now that you are familiar with each light source, the next step is to choose the best type of light to use for your project.

### Choose Fluorescent...

When you want to be blown away by the amount of light output generated by very little electricity. If you're looking for low-profile, very bright, long-lasting lights, go with fluorescent.

### Choose Halogen...

When you need crisp lighting that renders colors perfectly. Often the light source of choice for illuminating artwork and displays, and very popular in recessed lighting.

### Choose Incandescent...

When you want to stick with what you know best. Also, incandescent light bulbs are available in decorative styles (i.e. clear globes) that you can't always find in other light sources.

### Choose Xenon...

When you want the "warm look" of incandescent lighting but would prefer a bit more efficiency in your light source. Very popular in under cabinet lighting; plus, xenon is dimmable which is a great benefit.

### Choose LED...

When you want your light to be ultra-energy efficient, long-lasting, and cool to the touch. It seems like every day there are more and more choices in LED lighting so it is probably a good idea to look at your LED options for your situation.

### Choose a Candle...

When you're going for romantic appeal - or pretending you live in the 19th century.

# HOW TO READ LED LIGHT BULB PACKAGES

1

## ENERGY USE

The energy a bulb uses is measured in watts (W). You'll see much smaller numbers on LEDs, between 7W and 15W, than on traditional bulbs, such as 40W and 60W. EXAMPLE:

**9 WATTS**  
LED = **40 WATTS**  
INCANDESCENT

**11 WATTS**  
LED = **60 WATTS**  
INCANDESCENT

2

## LIGHTBULB TYPE OR SIZE

The familiar traditional light bulb is A19, so look for that number on a replacement LED bulb. Other common bulbs for ceiling fixtures might be A15 or A17 - choose the right size for your fixture.



**A19**



1

2

3

4

5

6



3

## BRIGHTNESS AND LIGHT OUTPUT

To see how bright a light bulb is, look for a measurement in lumens (lm). The higher the lumens, the brighter the bulb. LEDs produce the same amount of light (lumens) than traditional bulbs while using much less energy.

EXAMPLE

LED

**11 WATTS**

**900 LUMENS**

**900 LUMENS**

INCANDESCENT

**60 WATTS**

**800 LUMENS**

**800 LUMENS**



## OMNIDIRECTIONAL OR BEAM ANGLE

Most traditional bulbs shine light in all directions. Look for a label that says "omnidirectional". If you want that same wide angle of light for your lamp or fixture.



4

5

## LIGHT COLOUR OR COLOUR TEMPERATURE

Look for a description like "warm white" or "cool white," as well as the measurement, given in degrees Kelvin (e.g. 2700K). The higher the number, the whiter (then bluer), or cooler the light. The lower the number, the more yellow, or warmer, the colour. To match the light of traditional light bulbs (incandescent), look for a measurement of around 3000K.



6

## COLOUR ACCURACY, OR COLOUR RENDERING INDEX

This is how the bulb shows the colours of objects accurately on a scale of 0 to 100. As a general rule, the higher the better: light bulbs with high CRI (80-100 CRI) tend to make people and objects look better than light bulbs with lower CRIs.

**85 CRI**



**60 CRI**



Choose an **ENERGY STAR** light bulb

**75%**

Less energy than traditional incandescent lighting

They last a long time, up to **25,000 hours, or 25 years** based on average household use



# Recessed lighting is a bright idea

Use this chart to match a lighting style with the desired bulb style.

## Trims or styles



**Baffles** can minimize glare in lighting applications.



The most economical choice for recessed downlighting in the **Open** style.



**Reflectors** maximizes light output in residential and commercial environments.



**Eyeballs** provided adjustable/directional lighting applications.



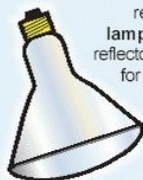
**Lens** diffuse light, shield the lamp and are deal for closets, bathrooms.

## Bulb styles

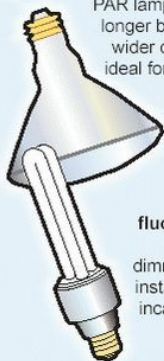


Standard light bulbs can be used in reflector and lens-fitted trims for general lighting applications.

### PAR bulbs



Parabolic aluminized reflector, or **PAR lamps**, have built-in reflectors and are used for general lighting, "wall washing" and display lighting.



PAR lamps provide longer beams and wider coverage - ideal for Task and General lighting.

**Compact fluorescents** cannot be dimmed when installed in an incandescent can.

## Application Details



① Cove Lighting



② Case Lighting



③ Toe Kicks



④ Under Cabinet/Shell



⑤ Curtain/Wall Washing



⑥ Backlit Glass/Signage

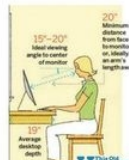
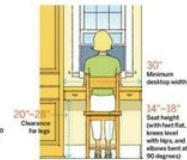
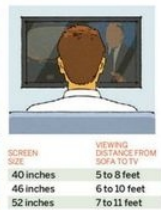
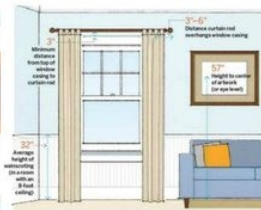
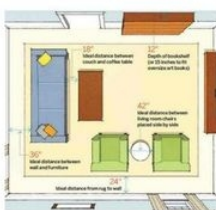
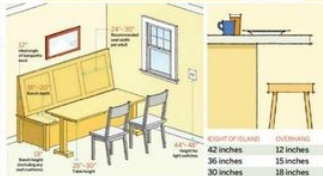
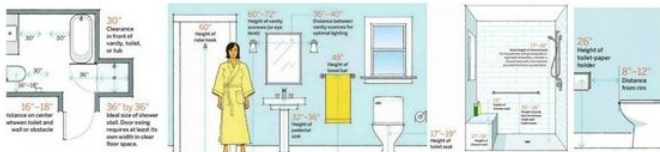


⑦ Railings/Architectural Details



⑧ Backlit Mirrors



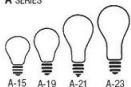
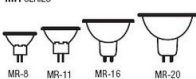
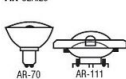
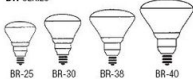
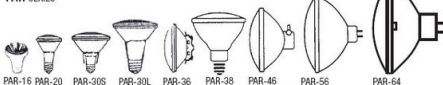
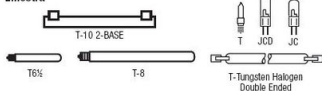
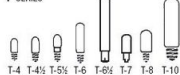
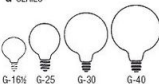
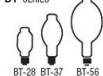
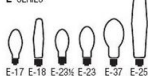
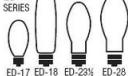


# BEAUTIFUL & AFFORDABLE

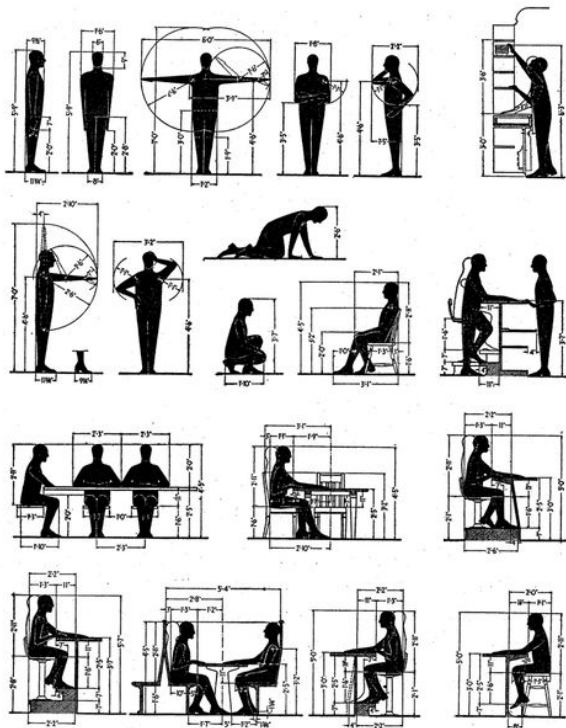
## *kitchen island pendant lights*



JUSTAGIRLANDHERBLOG.COM

**A SERIES****B SERIES****C-7/F SERIES****CA SERIES****S SERIES****F SERIES****RP, MB, BT****R SERIES****MR SERIES****PS-25/PS-35****AR SERIES****ALR SERIES****BR SERIES****PAR SERIES****Linestra****T SERIES****G SERIES****BT SERIES****E SERIES****ED SERIES**

# DIMENSIONS OF THE HUMAN FIGURE



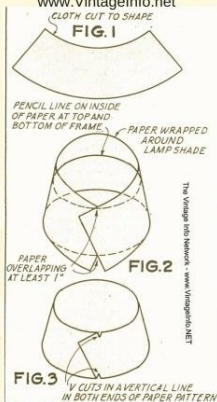
Scale of Human Figure  $\frac{1}{4}$ " = 1'-0"

These dimensions are based on the average or normal adult. As clearances are minimum they should be increased when conditions will allow. Table, desk, and other sitting work-top heights are shown 2'-5"; however some authorities prefer 2'-6" or 2'-6½". See sheets titled "Children's Furniture" for their size and furniture.  
 Reproduced by special permission of the Architectural Record, Copyright Owner  
 Drawings by Ernest Irving Freese

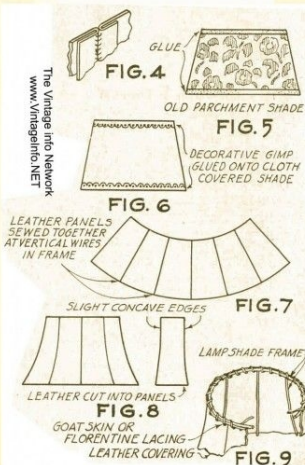


# HOW TO Recover a Lamp Shade

www.VintageInfo.net



The Vintage Info Network  
www.VintageInfo.NET



SCRIP

E10  
Mini  
Screw

SPE

Medi  
Side P

BI PI

4mm  
G4

COM

G24q-

2G

FILAI

Flicker

NOTE:  
C (colle  
CC (col

## SCREW BASES

## TWIST & LOCK BASES



## SPECIALTY BASES

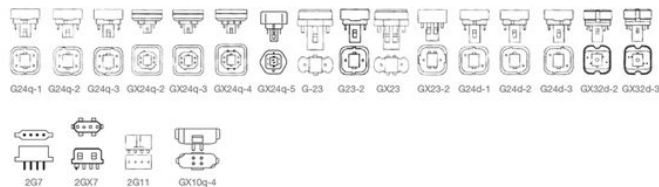


## BI PIN BASES

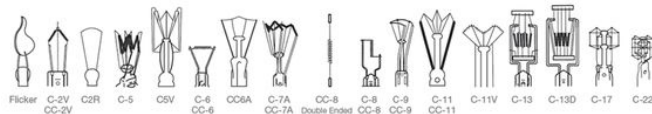
## FLUORESCENT PIN BASES



## COMPACT FLUORESCENT PLUG IN LAMP BASES



## FILAMENTS



### NOTE:

C (coiled) - Filament wire is wound into a helical coil or is deeply fluted.

CC (coiled coil) - Filament wire is wound into a helical coil and this coiled wire is wound again into a helical coil.





# PSICOLOGIA DAS CORES

Cor é uma forma de comunicação não verbal, mas que pode falar muito em uma fração de segundos. Cores podem traduzir o humor, transmitir emoções, induzir sensações e inspirar. Escolha a sua preferida!

www.entaharpuk.com

- VERMELHO ESCURO** (RGB 174,28,65 #A81414)  
rico, elegante, refinado, soberano, maduro, cores nobres, sofisticado
- VERMELHO TIJOLO** (RGB 122,34,48 #7A2330)  
terroso, quente, forte, country, estabelecido
- VERMELHO CLARO** (RGB 208,32,45 #D02020)  
esultante, energético, apaixonado, dinâmico, poderoso, impulsivo, aventureiro, exigente, agitado
- ROSA** (RGB 233,66,122 #E9427A)  
teatral, brincalhão, atencioso, alta costura, selvagem, tropical, festivo, vibrante, estimulante
- ROSA SUJO** (RGB 221,63,175 #DDA3AF)  
falso, sutil, acolhedor, encurva, suave, composto, nostálgico
- ROSA CLARO** (RGB 249,181,204 #F9B5C2)  
romântico, afetivo, compassivo, fofo, doce, sensível, delicado, inocente, jovem
- PÊSSEGO** (RGB 252,188,160 #FCBAC0)  
carinhoso, fofo, alegre, divertido, íntimo, confortável, íntimo, modesto, abrangente, total
- CORAL** (RGB 244,133,114 #F48572)  
força de viver, energético, flexível
- TANGERINA** (RGB 246,142,45 #F68E2D)  
vital, saudável, frutífero, energizante, picante
- LARANJA** (RGB 244,107,35 #F68E2D)  
divertido, fofo, brilhante, expansivo, alegre, comunicativo, sociável, ativo, animado
- KUJO** (RGB 198,60,50 #C63C32)  
picante, soberano, pungente, exótico
- TERRACOTA** (RGB 188,105,87 #BC6957)  
terra, saudável, acolhedor, abundância
- BRONZE** (RGB 185,129,80 #B985C1)  
discreto, de luxo, nobre
- CHOCOLATE** (RGB 102,59,43 #663B2B)  
delicioso, rico, nobre, apetitoso
- MARRON** (RGB 91,70,69 #5B4443)  
sólido, amadurecido, divertido, seguro, natural, confiante, tradicional, expansivo
- DOURADO** (RGB 133,118,79 #87644F)  
rico, divino, intuitivo, luxuoso, valioso
- AMBAR** (RGB 216,124,41 #D87C29)  
multi-cultural, moderno, abundante, autêntico
- AMARELO OURO** (RGB 248,168,29 #F8B829)  
nutritivo, amadurecido, soberano, conforto, hospitaleiro
- AMARELO** (RGB 254,207,7 #FFC07F)  
alegre, simpático, luminoso, cauteloso, enaltecido, estimulante, inovador, radiante
- AMARELO CLARO** (RGB 245,222,106 #F5DE6A)  
fofo, suave, enaltecido, aquecido, doce, fácil, agradável
- VERDE AMARELO** (RGB 215,218,85 #D7D455)  
artístico, curioso, surpreendente, afiado
- VERDE CLARO** (RGB 173,214,144 #ADD8E6)  
calmo, suave, realista, leve
- VERDE OLIVA** (RGB 140,143,74 #8C8F4A)  
militar, criatividade, sofria, clássico
- BRANCO** (RGB 255,255,255 #FFFFFF)  
puro, limpo, impetuoso, inocente, virginal, simplicidade, silencioso

- VERDE ESCURO** (RGB 17,70,52 #006434)  
natural, confiante, repouso, imponente, tradicional, próspero, silencioso
- VERDE FOLHA** (RGB 16,104,53 #06535F)  
natural, fértil, crescimento, calmaria, harmonia, repouso, restauração, tranquilidade
- VERDE** (RGB 2,154,77 #0294D0)  
fresco, animado, renovação, exuberante
- ESMERALDA** (RGB 0,153,123 #00997B)  
luxuoso, jóia
- VERDE ÁGUA** (RGB 161,212,203 #A0D4CB)  
água, refrescante, limpa, jovem, fresco, saudável, macio, leve
- TURQUESA** (RGB 187,193,175 #40C1AF)  
infinito, compassivo, protetor, flutua, frio, céu, pedra preciosa, tropical
- SAFIRA** (RGB 2,104,129 #00688B)  
sereno, sofisticado, confiante
- AZUL CÉU** (RGB 112,177,197 #70B4C5)  
colossalidade, celestial, constante, infinito, verdadeiro, confiante, tranquilo, sereno, expansivo
- AZUL CLARO** (RGB 152,191,230 #98BFE6)  
calmo, paciente, limpo
- PERVÍNCIA** (RGB 130,147,201 #8293C9)  
genial, animado, alegre, jovial, cordial
- AZUL** (RGB 113,185 #007B9F)  
elétrico, energia, vivo, vibrante, inquieto, impressionante, equitativo, alto astral, divertido
- AZUL ESCURO** (RGB 33,45,105 #202D49)  
credibilidade, autoridade, clássico, forte, conservador, confiante, tradicional
- LAVANDA** (RGB 184,45,149 #B84195)  
romântico, nostálgico, fantástico, leve, levemente perfumado
- ÍNDIA** (RGB 141,115,145 #A17693)  
melancólico, sentimental, passivo
- ATLETISTA** (RGB 183,133,184 #B78585)  
curativo, proteção, paz de espírito
- ROXO AZULADO** (RGB 100,50,147 #643293)  
contemplativo, misterioso, espiritual, intuitivo, encantador
- ROXO** (RGB 135,42,146 #872A92)  
sensível, emocionante, intenso, dramático, criativo, inteligente, expressivo
- ROXO ESCURO** (RGB 60,25,79 #3C194F)  
visceral, rico, real, prestigioso, introspectivo
- CINZA** (RGB 137,141,140 #8D8D8D)  
sério, cooperativo, prático, lógico, discreto, reservado, eficiente, modesto
- CINZA ESCURO** (RGB 85,89,92 #55595C)  
firme, responsável, consciente, cortês, conservador, profissional, sólido, duradouro, maduro
- TAUPE** (RGB 148,160,137 #A8A089)  
prático, atemporal, qualidade, autêntico, discreto, modesto, comprometido
- MARFIM** (RGB 250,226,166 #FAE2AE)  
clássico, neutro, suave, refinado, refinado, cremoso, suave, sutil, natural, musical
- PRATA** (RGB 194,194,194 #C0C0C0)  
elegante, elegante, elegante, moderno, fresco
- PRETO** (RGB 0,0,0 #000000)  
poderoso, capacitado, elegante, sofisticado, misterioso, sério, insubornável, mágico, elegante



# the Psychology of Color

what colors  
to paint your  
home & why.

## Office

Blue: Most productive color.

## Bedroom

Green: Tranquility and Health.

## Girl's Room

Pink: Calming, Warm.

## Kitchen

Yellow: Increases metabolism, brightens room, gives you energy.

## Living Room

Lavender: Calms the nerves, allows relaxation.

## Dining Room

Red: Encourages Appetite.

## Color Psychology

### YELLOW

- Cheerful or warm
- Most likely to strain eyes or cause eye fatigue
- Makes Babies Cry  
Don't paint a baby's room yellow, because they are more prone to crying.

### BLUE

- The color most preferred by men
- Calmness or serenity
- Most used color for offices  
People are more productive in blue rooms
- Curbs appetite
- Associated with water and peace

## PRIMARY COLORS:

### RED

- Evokes strong emotions
- Encourages appetite  
(many restaurants use red in their signage/ads)
- Passion or intensity
- Red roses symbolize love

**Studies show that red can make you do poorly on exams!**

"Red is hypothesized to impair performance on achievement tasks, because red is associated with the danger of failure in achievement contexts and evokes avoidance motivation."



GREEN

- Health
- Tranquility
- Money
- Nature

Workers in green environments have fewer stomach aches.



PURPLE

- Royalty
- Wealth
- Success
- Wisdom

Many kings wore



- Calming
- Love
- Romance

"Stunk tank pink" is a color that is actually

# Electronics Reference Sheet v1.1b

Cathode  
Anode

LED



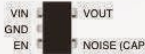
Marked by  
color or  
dot



CAPACITOR



REGULATOR  
(e.g. LM78xx)



Resistor

Digit	Multiplier	Tolerance
Silver	0.01	±10%
Gold	0.1	±5%
Black	0	-
Brown	1	±1%
Red	2	±2%
Orange	3	1k
Yellow	4	10k
Green	5	100k
Blue	6	1M
Violet	7	10M
Gray	8	-
White	9	-

DIODE



1st Digit  
2nd Digit  
Multiplier  
Tolerance



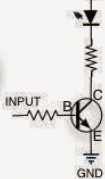
1st Digit  
2nd Digit  
Multiplier

NPN transistor (Current sink)  
(e.g. PN2222)

TO-92



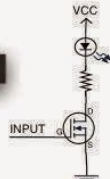
SOT-23



N-channel MOSFET



SOT-23

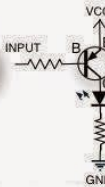


PNP transistor (Current source)  
(e.g. PN2907)

TO-92



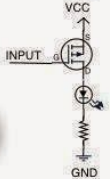
SOT-23



P-channel MOSFET



SOT-23



\* Please note that some components may have a different pinout than the one showed above, you should always check the data sheet before using a new component.



THE PROPOSAL

In essence, the *Belgian Pavilion* is a statement of the pavilion's cost and the architectural intent that follows.

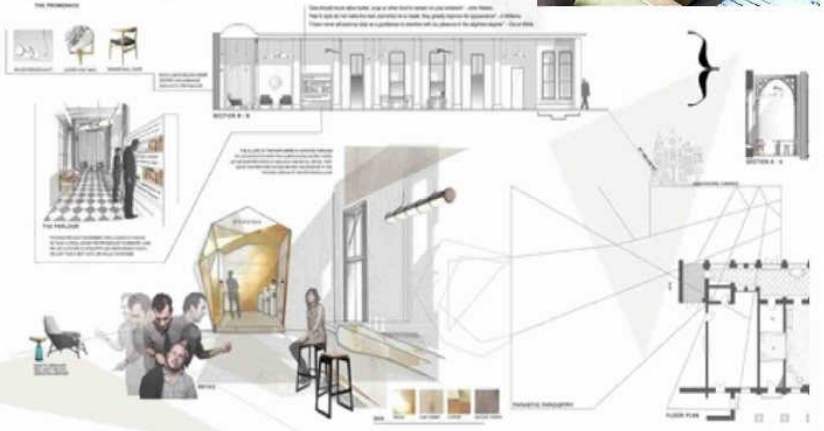
The *Belgian Pavilion* must be a statement of the pavilion's cost and the architectural intent that follows.

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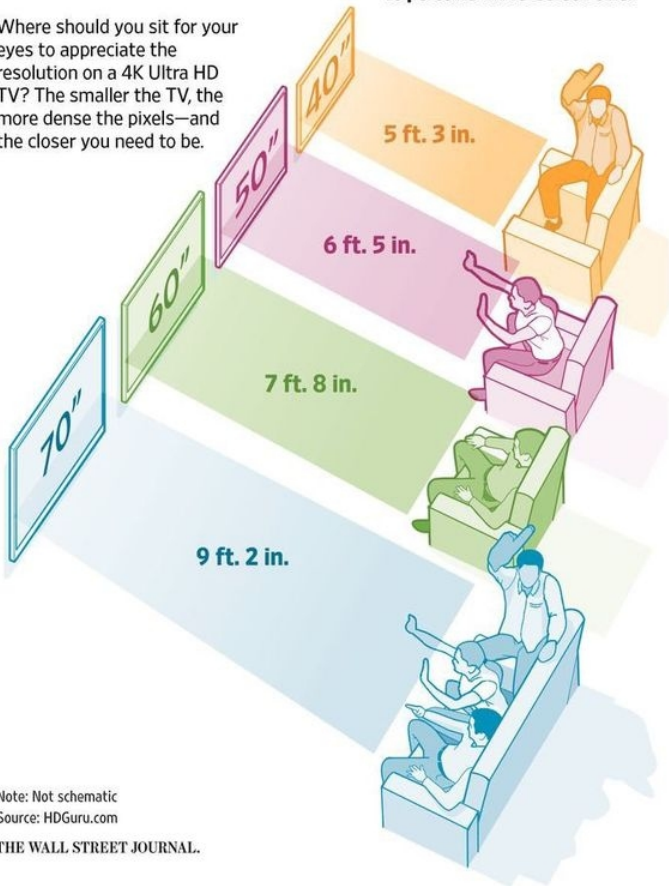
The *Belgian Pavilion* must be a statement of the pavilion's cost and the architectural intent that follows.



# Can You See 4K?

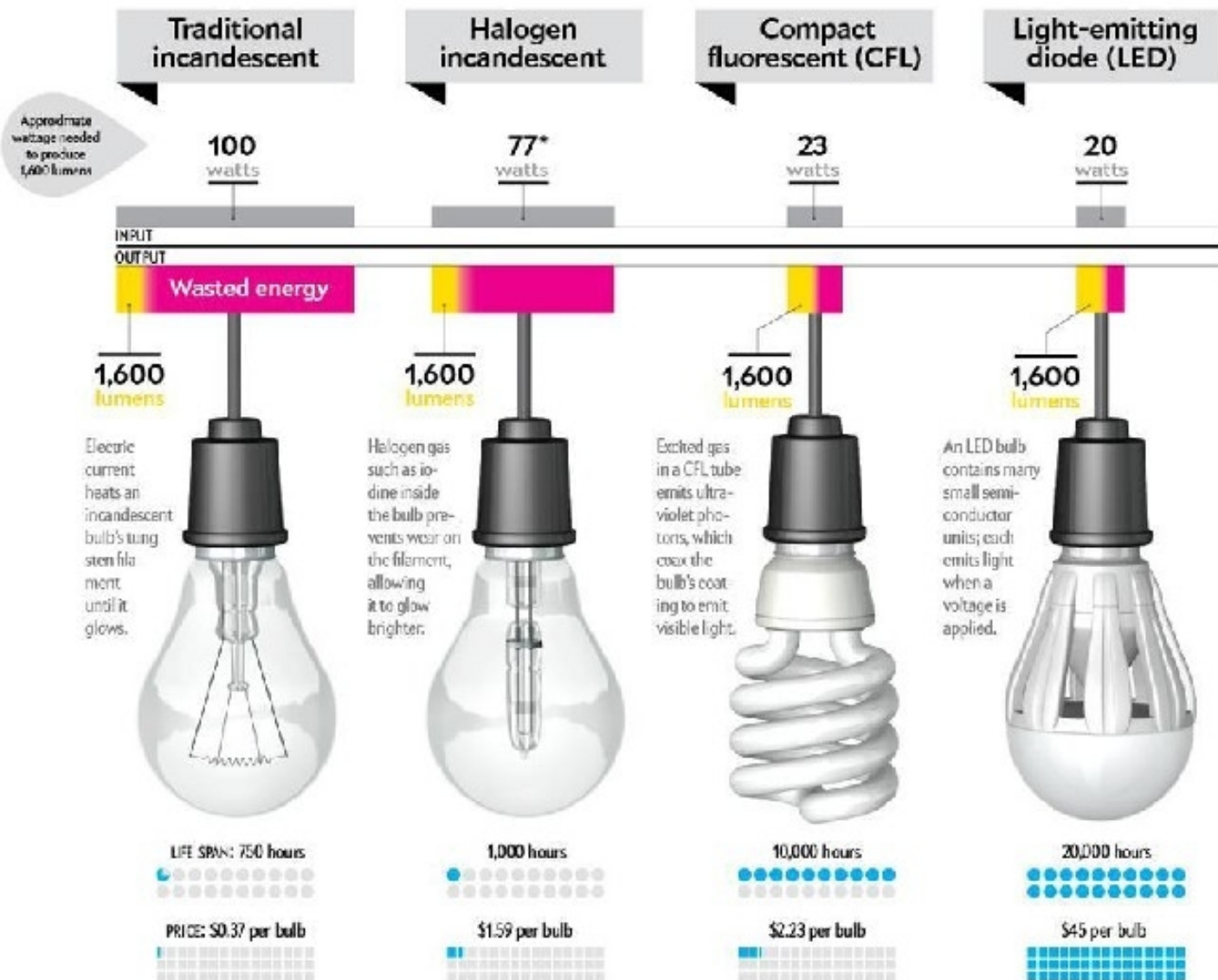
Where should you sit for your eyes to appreciate the resolution on a 4K Ultra HD TV? The smaller the TV, the more dense the pixels—and the closer you need to be.

Maximum seating distance to perceive 4K vs. screen size:



Note: Not schematic  
Source: HDGuru.com

THE WALL STREET JOURNAL.





## Soft White

*(Also known as 2700 Kelvin)*

This is a very soft yellowish light that creates a very smooth and relaxing feel. It's the gentlest light so it's great for overall illumination in areas such as a living room, dining room or bedroom.



## Cool White

*(Also known as 4100 Kelvin)*

This is a bit whiter than the soft white light of an incandescent. This color is great for lighting in kitchens, bathrooms, security/outdoor lighting or a work space.







## Daylight

*(Also known as 5000 - 6500 Kelvin)*





This is a bluish, whitish light and resembles noon on a cloudless day. This color is great for working on projects, reading or accent lighting.



How many lumens do you need? (120v)

BRIGHTNESS →		250+	450+	800+	1100+	1600+
STANDARD		25W	40W	60W	75W	100W
HALOGEN		18W	29W	43W	53W	72W
CFL		6W	10W	13W	18W	23W
LED		4W	5W	10W	15W	20W



EFFICIENCY	LEAST			MOST
BULB TYPE	 STANDARD	 HALOGEN	 CFL	 LED
450 LUMENS	40W	29W	9W	6W
800 LUMENS	60W	42W	14W	9W
1100 LUMENS	75W	53W	18W	11W
1600 LUMENS	100W	72W	23W	14W
RATED LIFE	1 YEAR	1-3 YEARS	6-10 YEARS	12-25 YEARS
SAVINGS	×	UP TO 30%	UP TO 75%	UP TO 90%



YOU USED TO BUY

CONSIDER

LEAST EFFICIENT

MOST EFFICIENT

Incandescent



Halogen



CFL



LED



**450**  
lumens

**40W**

**29W**

**9W**

**7W**

**800**  
lumens

**60W**

**43W**

**14W**

**10W**

**1,100**  
lumens

**75W**

**53W**

**19W**

**17W**

**1,600**  
lumens

**100W**

**72W**

**23W**

**20W**

What to look for  
when you shop for light bulbs

You used to  
look for

Watts (energy)

150 w

**Lumens**  
(brightness)

Now you  
look for

100 w

2600 lm

75 w

1600 lm

60 w

1100 lm

40 w

800 lm

450 lm

Estimates based on typical incandescent bulbs

This chart shows the number of lumens produced by common incandescent bulbs. If you're looking to buy a bulb that will give you the amount of light you used to get from a 60-watt bulb, you'll now look for 800 lumens.

# How to Buy a Light Bulb

Lumens: The new way of looking at light.

1

You used to buy these.



INCANDESCENT

WATTS
100W
75W
60W
40W

2

You want this much light.



**LUMENS**

<b>1600</b>
<b>1100</b>
<b>800</b>
<b>450</b>

3

Now you can buy these.



**LED**  
Most Efficient



**CFL**  
More Efficient



**HALOGEN**

WATTS		
coming soon	up to <b>23W</b>	up to <b>72W</b>
coming soon	up to <b>20W</b>	up to <b>53W</b>
up to <b>12W</b>	up to <b>13W</b>	up to <b>43W</b>
up to <b>9W</b>	up to <b>9W</b>	up to <b>29W</b>

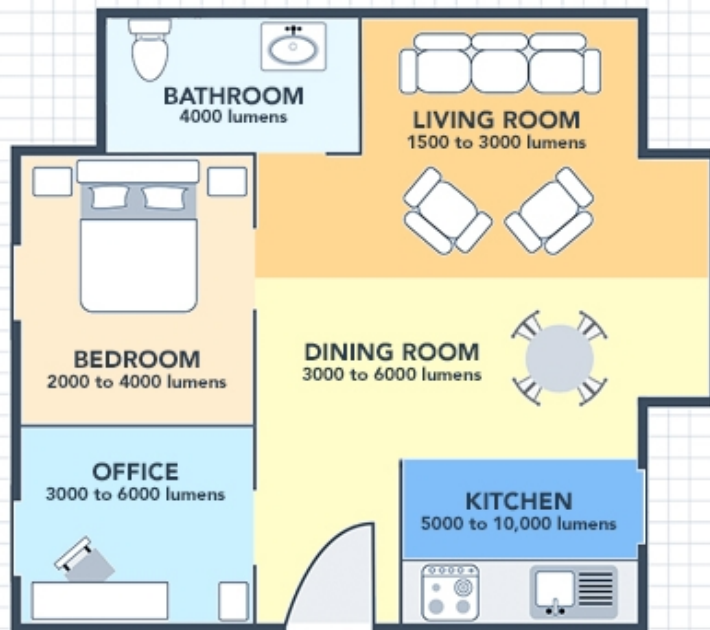
Lumen outputs and wattages are based on the most common products available for each medium screw base light bulb. Actual lumen output and wattage may vary by product.

Revised April 20, 2012

**MORE LUMENS = MORE LIGHT**

# LED

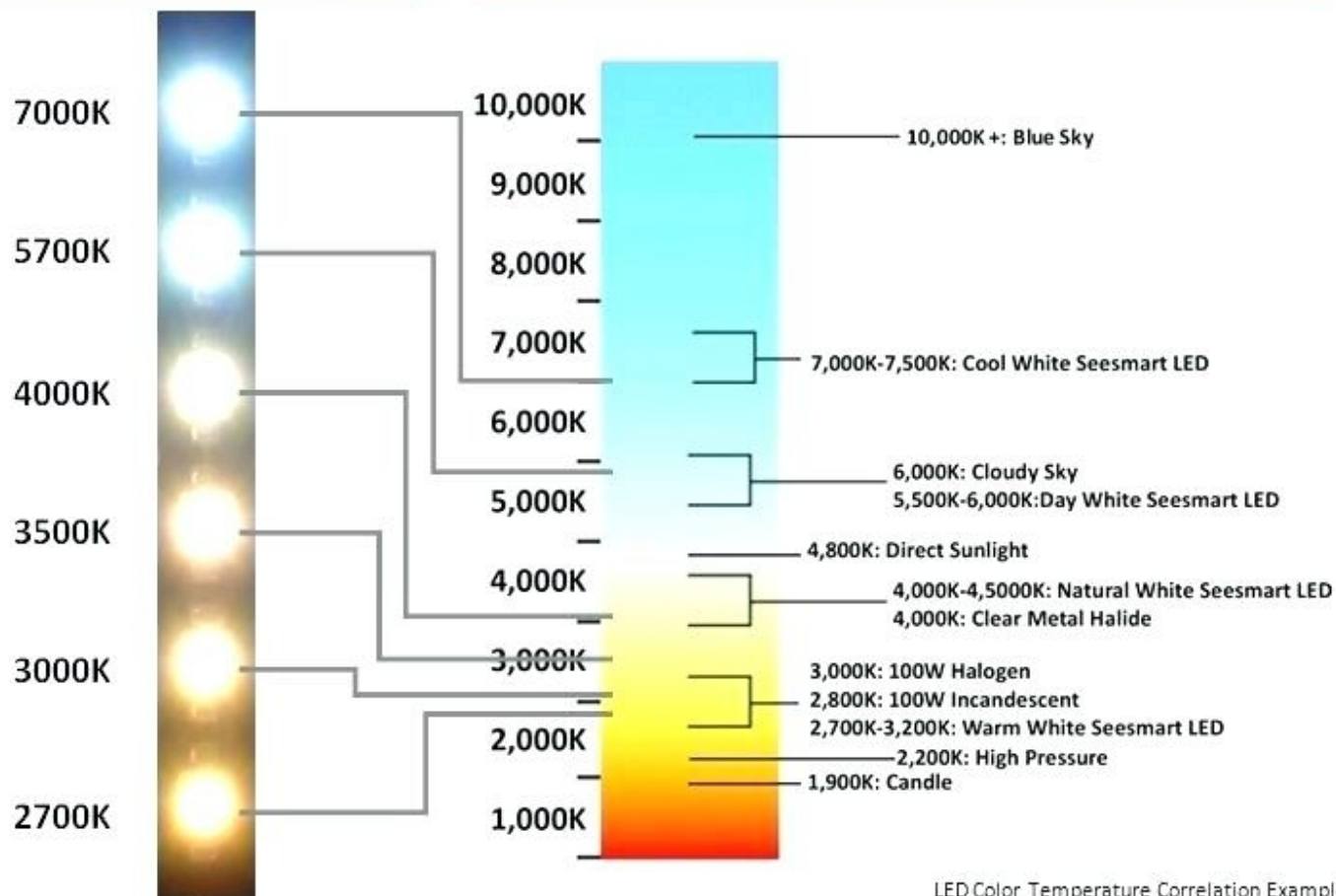
- Lumens by Room -



Lumens Per Room       Lumens Needed Per Bulb  
Number of Light Sockets

## Basic LED Reference Example

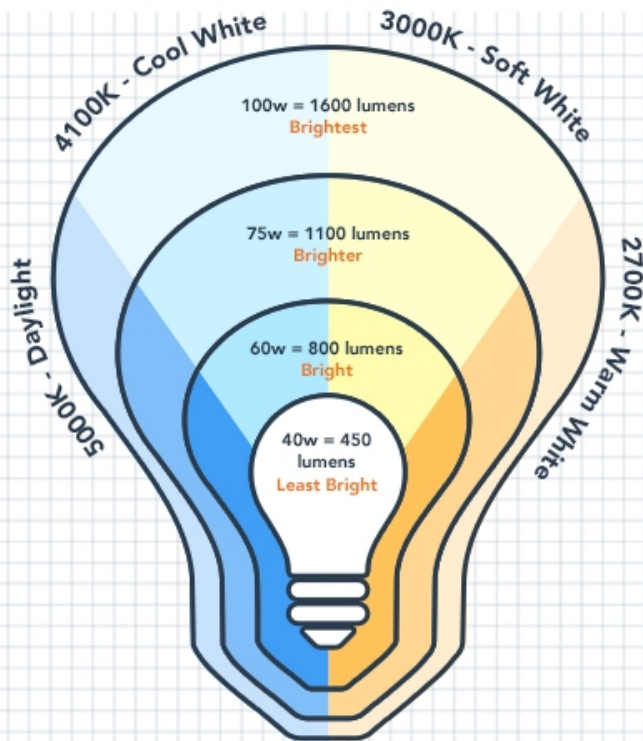
## Kelvin Color Temperature Scale Chart



LED Color Temperature Correlation Example

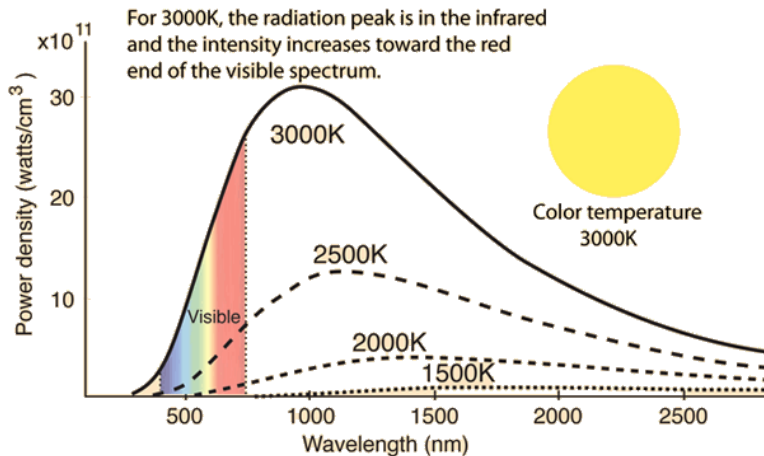
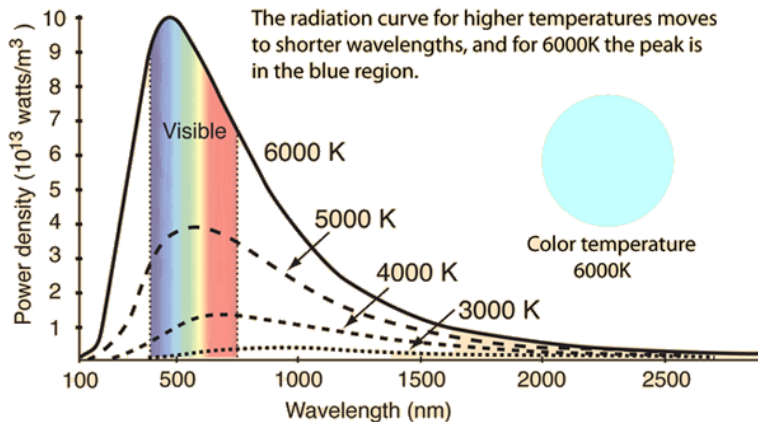
# LED

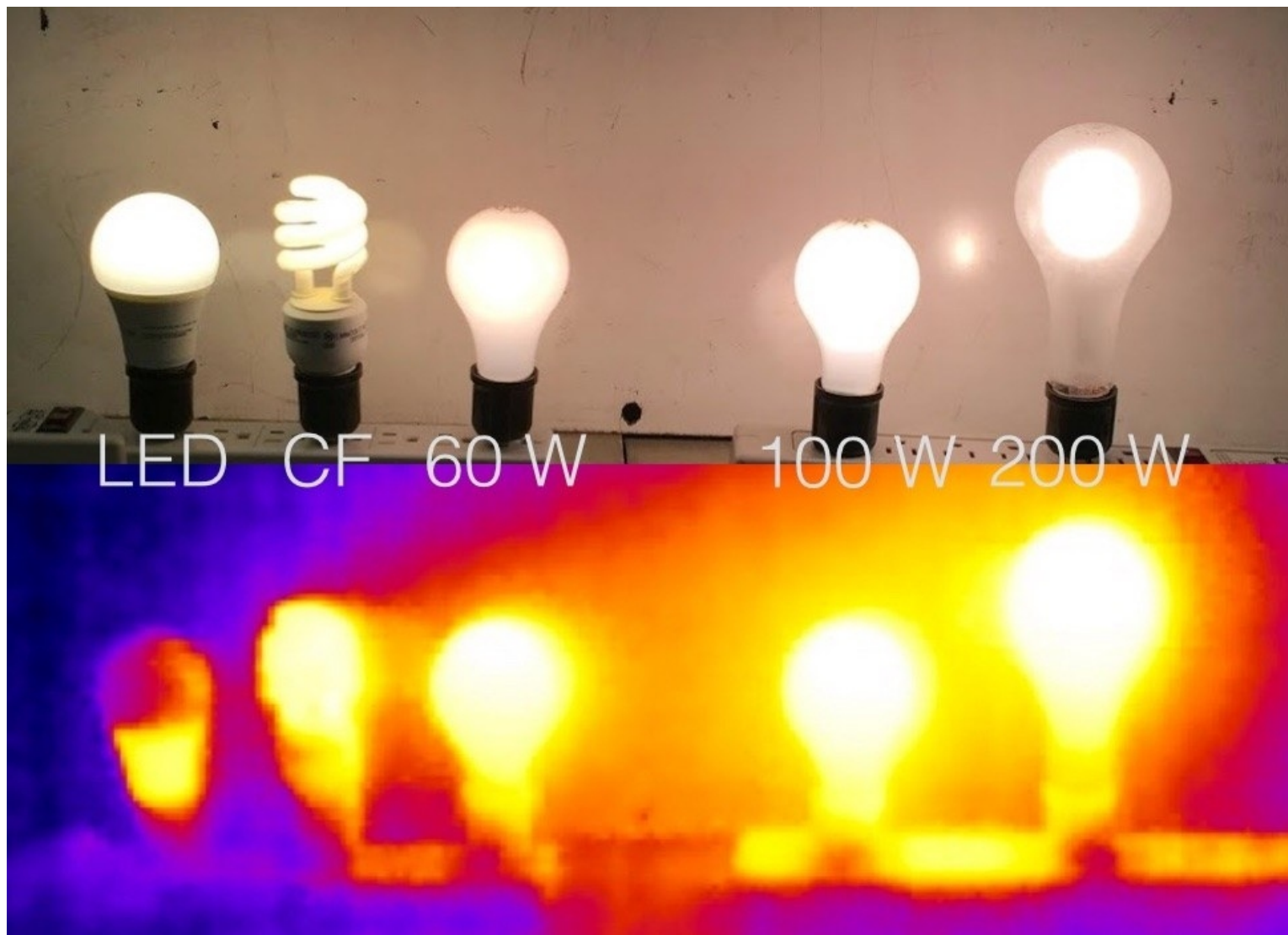
## - Brightness & Color -



Power density ( $10^{13}$  watts/ $m^3$ )

Power density (watts/ $cm^3$ )

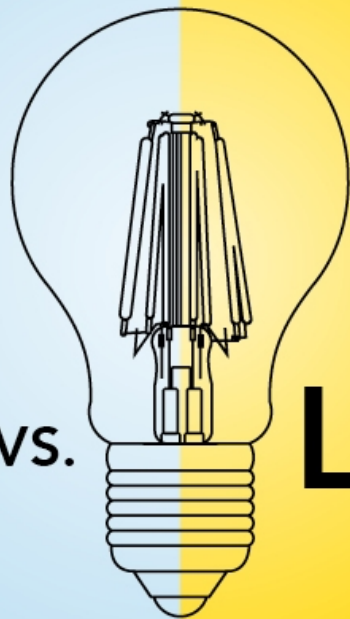








**WATTS** vs.  
(ENERGY USED)



**LUMENS**  
(BRIGHTNESS)

**LUX**



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*(Also known as 2700 Kelvin)*

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*(Also known as 5000 - 6500 Kelvin)*

This is a bluish, whitish light and resembles noon on a cloudless day. This color is great for working on projects, reading or accent lighting.



# FORM AND FUNCTION

## Hard-Wired Lights

Light fixtures must be mounted to surface for electricity and require an electrician to install.



## Portable Lamps

Light can be moved further into the room if connected to a cord. Lamps plug into a standard electrical outlet and can be repositioned.



## Decorative Lights

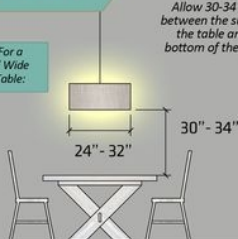
Extending light into the room requires extra materials, which now add to the decorative theme



# HOW TO CHOOSE THE "OH-SO-PERFECT" LIGHTING SIZE:

## OVER A TABLE:

For a  
4' Wide  
Table:

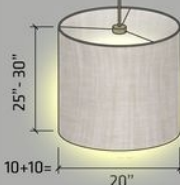


The fixture's diameter should be 1/2 to 2/3 the width of the table.

Allow 30-34 inches between the surface of the table and the bottom of the fixture.

For a  
10'x10'x10'  
Space:

## NOT OVER A TABLE:



For an ideal fixture diameter, take the sum of your room's length and width and convert to inches.

Allow 7 feet from the floor to the bottom of your light fixture.

Each foot of ceiling height should represent 2.5-3 inches for your chandelier's height (excluding chain).

## KITCHEN ISLAND:

Allow 30-34 inches between the top of the island and the bottom of light fixture.

$$Y = \frac{\text{Length of Island} - (\# \text{ of Pendants} \times \text{Fixture Diameter})}{4}$$



The space between the pendants should be larger than the diameter of the pendant.

## FOYER CHANDELIER:



If you have a 2-story foyer, the bottom of your fixture should not be lower than the second floor.

Foyers with windows, be sure to center the chandelier within the window.

## BATHROOM SCONCES:

The bottom of the shade should be 60-65 inches from the floor.



## BATHROOM VANITY:



The fixture should be at least 24 inches wide and should be the same size or smaller than the mirror

Allow 75-80 inches between the surface of the floor and the bottom of the light fixture.



LIGHTING CONNECTION

# ENERGY EFFICIENT MODERN TECHNOLOGY

Automatic Dimmer  
for Lighting

15%  
ENERGY SAVED

Resource Saver  
Refrigerator

30%  
ENERGY SAVED

Programmable  
Blinds & Drapes\*

20%  
ENERGY SAVED

Electronic Ignition  
Gas Stove  
& Convection Ovens\*\*

33%  
ENERGY SAVED

Automatic Activation &  
De-activation Tankless  
Gas Water Heater

22%  
ENERGY SAVED

High Efficiency  
Ventilation Fans†

60%  
ENERGY SAVED

LED-Backlit LCD  
Television

60%  
ENERGY SAVED

Automated HVAC  
Systems for  
Heater & Cooler††

20%  
ENERGY SAVED

\*Blinds and drapes can be programmed to close during the hottest part of the day to block up the sun, keeping the house cooler. They can also open up during colder winter months to allow the sun in to warm the house.

\*\*Newer ovens have additional insulation and tighter-fitting oven door gaskets and hinges to save energy. Convection ovens distribute heat more evenly so cooking time and temperatures can be reduced, cutting energy use by about a third.

†Qualified ventilation fans use 60% less energy than standard models, provide better efficiency and comfort with less noise, and can help save up to \$75 each year.

††Automated HVAC systems can maintain a more energy-efficient temperature while the home owners are away at work, but switch to a more comfortable temperature prior to their arrival home.

## SOURCES

<http://www.census.gov/housing/ahs/data/ahs2009.html>  
<http://www.census.gov/compendia/statab/2012/tables/12s1003.pdf>  
[http://www.boston.com/realestate/news/blogs/renov/2011/05/getting\\_a\\_hand.html](http://www.boston.com/realestate/news/blogs/renov/2011/05/getting_a_hand.html)  
[http://www.nahb.org/fileUpload\\_details.aspx?contentID=99359](http://www.nahb.org/fileUpload_details.aspx?contentID=99359)  
<http://homeguides.eigate.com/improve-chances-home-loan-1468.html>  
[http://www.nahb.org/reference\\_list.aspx?sectionID=124](http://www.nahb.org/reference_list.aspx?sectionID=124)  
<http://online-behavior.com/analytics/chart-types>  
<http://www.energystar.gov/>

**redbeacon**  
Home services done right

[www.redbeacon.com](http://www.redbeacon.com)





## Lumens (brightness)

**150 w**

**2600 lm**

**100 w**

**1600 lm**

**75 w**

**1100 lm**

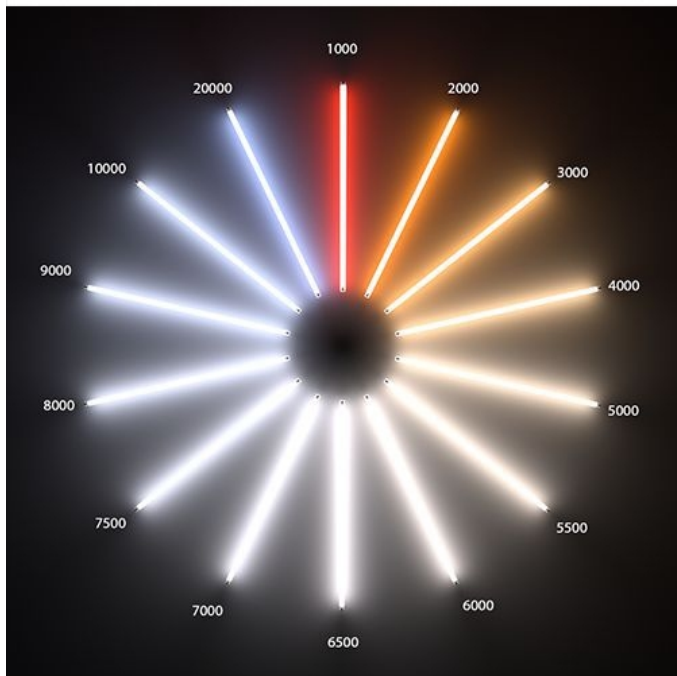
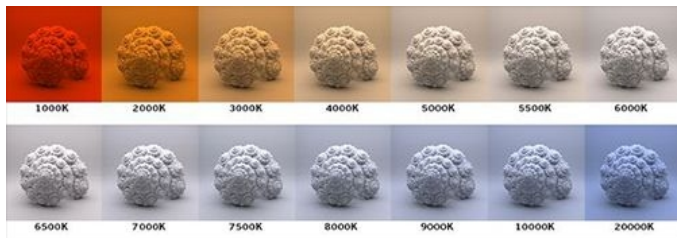
**60 w**

**800 lm**

**40 w**

**450 lm**

**Watts (energy)**



### Traditional incandescent

### Halogen incandescent

### Compact fluorescent (CFL)

### Light-emitting diode (LED)

Approximate  
wattage needed  
to produce  
1,600 lumens

100  
watts

77\*  
watts

23  
watts

20  
watts

INPUT  
OUTPUT

Wasted energy

1,600  
lumens

Electric current heats an incandescent bulb's tungsten filament until it glows.



LIFE SPAN: 750 hours



PRICE: \$0.37 per bulb



1,600  
lumens

Halogen gas such as iodine inside the bulb prevents wear on the filament, allowing it to glow brighter.



1,000 hours



\$1.59 per bulb



1,600  
lumens

Excited gas in a CFL tube emits ultra-violet photons, which coax the bulb's coating to emit visible light.



10,000 hours



\$2.23 per bulb



1,600  
lumens

An LED bulb contains many small semi-conductor units; each emits light when a voltage is applied.



20,000 hours



\$45 per bulb





## Incandescent Vintage Style Bulbs - \$10

Warm Color - Dimmable - 3,000 Life Hours



**Edison**  
40W/60W  
125 / 230 Lumens



**Spiral Globe**  
40W  
100 Lumens



**Victorian**  
40W  
100 Lumens



**Radio**  
40W  
100 Lumens



**Tube**  
40W  
100 Lumens

## NEW! LED Filament Style Bulbs - \$15

Amber Glass - Dimmable - 15,000 Life Hours



**LED Edison**  
4W  
400 Lumens



**LED 3" Globe**  
4W  
400 Lumens



**LED Victorian**  
2W  
200 Lumens



**LED Radio**  
2W  
200 Lumens



**LED 5" Globe**  
4W  
400 Lumens

## Clear Bulbs

White Light - Dimmable



**Clear 5" Globe**  
25W 120 Lumens  
110V only  
4,000 Life Hours



**Clear 3" Globe**  
25W 212 Lumens  
110V or 220V (40W)  
2,500 Life Hours

## FAQ

ALL Bulbs are **Dimmable**

**Lumens** = "Brightness"

Standard Size Socket: Twist Base **E26** or **E27**

Worldwide Use: **110V** (USA) OR **220V** (EU/AUS)

**Antique Mix:** Mix of 5 Incandescent Shaped Bulbs

**LED Mix:** Mix of first 4 LED bulbs

**Clear Mix:** Mix of 3" and 5" Globes

Dimmer Brighter

14 watt CF



DIRECT

0°

CEILING

PENG DI

LUMINOUS

OMNIDIRECT

THROUGH

OFF ANGLE

THROUGH

6°

LED & INCANDESCENT  
DIMMABLE. WARM LIGHT. E26 BASE



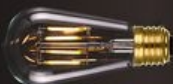
INCANDESCENT

**30 WATTS**

120 LUMENS  
4.06" x 2.18"

**60 WATTS**

400 LUMENS  
4.06" x 2.18"



LED

**4 WATTS**

40,000 LIFE HOURS  
40 WATT EQUIVALENT  
470 LUMENS  
4.3" x 2.4"



INCANDESCENT

**30 WATTS**

3,000 LIFE HOURS  
100 LUMENS  
5.2" x 3.66"



LED

**4 WATTS**

40,000 LIFE HOURS  
40 WATT EQUIVALENT  
400 LUMENS  
4.4" x 3"



INCANDESCENT

**30 WATTS**

120 LUMENS  
5.3" x 2.6"

**60 WATTS**

400 LUMENS  
5.3" x 2.6"

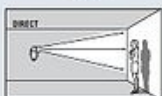


LED

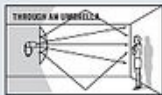
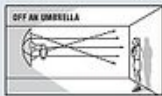
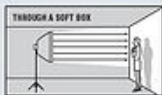
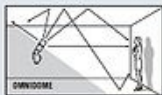
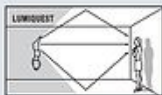
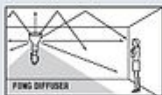
**6 WATTS**

40,000 LIFE HOURS  
60 WATT EQUIVALENT  
400 LUMENS  
4.3" x 2.4"

## Indoors



## Indoors

Outdoors at Night  
no reflective surfacesNO CEILING  
OUTDOORS

Photos by Paul Voelke

Name \_\_\_\_\_

Date \_\_\_\_\_



## GEOMETRY QUICK GUIDE 5: 3D SHAPE FORMULAS

<p><b>3D SHAPES</b></p> <p>All 3d shapes can be described in terms of their faces, vertices and edges.</p> <ul style="list-style-type: none"> <li>Face - a flat or curved surface</li> <li>Edge - line where 2 faces meet</li> <li>Vertex - point where 3 or more edges meet</li> </ul>	<p><b>CUBE</b></p> <p>Volume = <math>s^3</math></p> <p>Surface area = <math>6s^2</math></p> <p>where <math>s</math> is the length of one side</p>	<p><b>CUBOID (RECTANGULAR PRISM)</b></p> <p>Volume = <math>\ell \times w \times h</math></p> <p>Surface area = <math>2\ell h + 2\ell w + 2wh</math></p> <p>where <math>\ell</math> = length, <math>w</math> = width, <math>h</math> = height</p>
<p><b>PYRAMIDS</b></p> <p>Volume of a general pyramid = <math>\frac{1}{3} Ah</math></p> <p>where <math>A</math> = base area and <math>h</math> = height</p>	<p><b>REGULAR TETRAHEDRON</b></p> <p>Volume = <math>b^3 / 6\sqrt{2}</math></p> <p>Surface area = <math>\sqrt{3}b^2</math></p>	<p><b>SQUARE PYRAMID</b></p> <p>Volume = <math>\frac{1}{3} s^2 h</math></p> <p>Surface area = <math>s^2 + 2sh</math></p>
<p><b>PRISMS</b></p> <p>Volume of any prism = <math>Ah</math></p> <p>Surface area of a closed prism = <math>2A + (h \times p)</math></p> <p>where <math>A</math> = base area, <math>h</math> = height, <math>p</math> = base perimeter</p>		<p><b>TRIANGULAR PRISM</b></p> <p>Volume = <math>A\ell</math> or <math>\frac{1}{2}bh\ell</math></p> <p>Surface area = <math>bh + 2\ell s + \ell b</math></p>
<p><b>SPHERES</b></p> <p>Volume = <math>\frac{4}{3} \pi r^3</math></p> <p>Surface area = <math>4\pi r^2</math></p>	<p><b>RIGHT CYLINDER</b></p> <p>Volume = <math>\pi r^2 h</math></p> <p>Surface area = <math>2\pi r(r + h)</math></p>	<p><b>RIGHT CIRCULAR CONE</b></p> <p>Volume = <math>\frac{1}{3} \pi r^2 h</math></p> <p>Surface area = <math>\pi r(r + s)</math></p>



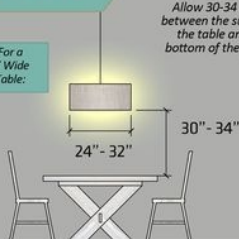
Free Math Sheets, Math Games and Math Help

[MATH-SALAMANDERS.COM](http://MATH-SALAMANDERS.COM)

# HOW TO CHOOSE THE "OH-SO-PERFECT" LIGHTING SIZE:

## OVER A TABLE:

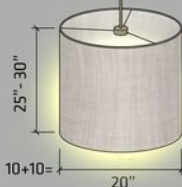
For a  
4' Wide  
Table:



The fixture's diameter should be 1/2 to 2/3 the width of the table.

Allow 30-34 inches between the surface of the table and the bottom of the fixture.

For a  
10"x10"x10"  
Space:



## NOT OVER A TABLE:

For an ideal fixture diameter, take the sum of your room's length and width and convert to inches.

Allow 7 feet from the floor to the bottom of your light fixture.

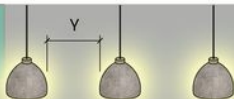
Each foot of ceiling height should represent 2.5-3 inches for your chandelier's height (excluding chain).

## KITCHEN ISLAND:

Allow 30-34 inches between the top of the island and the bottom of light fixture.

$$Y = \frac{\text{Length of Island} - (\# \text{ of Pendants} \times \text{Fixture Diameter})}{4}$$

The space between the pendants should be larger than the diameter of the pendant.



## FOYER CHANDELIER:



If you have a 2-story foyer, the bottom of your fixture should not be lower than the second floor.

Foyers with windows, be sure to center the chandelier within the window.

## BATHROOM SCONCES:

The bottom of the shade should be 60-65 inches from the floor.



## BATHROOM VANITY:



The fixture should be at least 24 inches wide and should be the same size or smaller than the mirror

Allow 75-80 inches between the surface of the floor and the bottom of the light fixture.



LIGHTING CONNECTION

SCRE  
(MEA

73"

65

57

50/

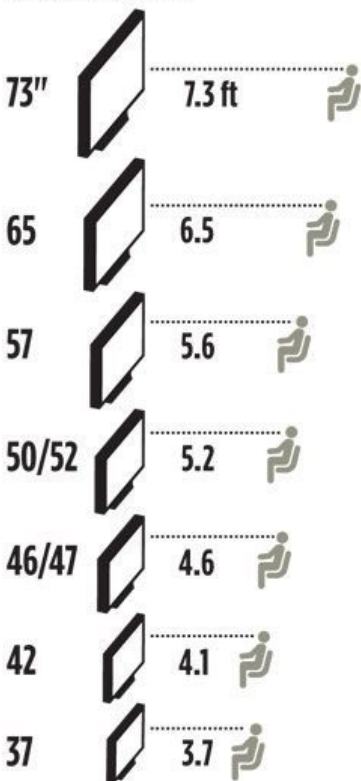
46/

42

37

\*For vid  
a good  
video q

SCREEN SIZE IN INCHES  
(MEASURED DIAGONALLY)



\*For viewing standard-definition video on an HDTV, it is always a good idea to add some extra distance so the relatively poor video quality isn't quite as obvious.



(g) Mirror lit from above



(h) Mirror lit from two sides







## Temperatura de Cor



Luz Quente

**3000k**

Luz Neutra

**4500k**

Luz Fria

**6000k**

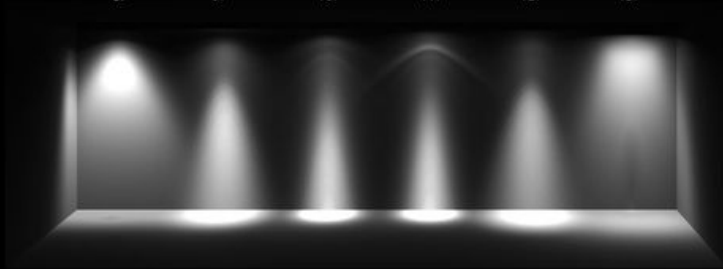




indoor



recessed luminaires



recessed spotlights/ floodlights/ wallwashers



## Distância



Min.1,00m

Máx.2,00m

26"



Min.1,20m

Máx.2,40m

32"



Min.1,40m

Máx.2,80m

37"



Min.1,50m

Máx.3,00m

40"



Min.1,60m

Máx.3,20m

42"



Min.1,75m

Máx.3,50m

46"



Min.1,90m

Máx.3,80m

50"



Min.2,00m

Máx.4,00m

52"



Min.2,10m

Máx.4,20m

55"



Min.2,20m

Máx.4,60m

60"

OVER



BOME

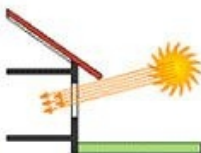


LAME

### OVERSTEK

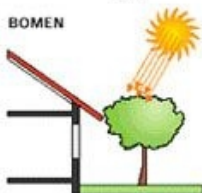


zomer



winter

### BOMEN

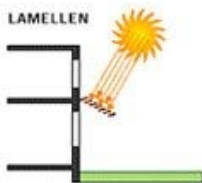


effect zomer

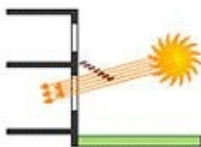


effect winter

### LAMELLEN



zomer

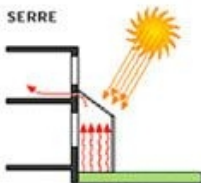


winter

### SERRE



zomer



winter

## Brightness

220+



400+



700+



900+



1300+



**Halogen**

18W

28W

42W

53W

70W



**LED**

4W

6W

10W

13W

18W



**CFL**

6W

9W

12W

15W

20W



**Standard**

25W

40W

60W

75W

100W

A lumen is the true measurement of light output and brightness.



Incandescent

Lumens

LED  
Most efficient

CFL  
More efficient

Halogen/Incandescent  
Efficient

100W

1600

unavailable

up to 26W

up to 72W

75W

1100

unavailable

up to 23W

up to 53W

60W

800

up to 12W

up to 15W

up to 43W

40W

450







up to 9W

up to 11W

up to 29W

110V only  
4,000 Life Hours

110V or 220V (40W)  
2,500 Life Hours

		Dimmer 				Brighter	
Lumens		450	800	1100	1600		
Less Efficient  More Efficient	Standard Incandescents 	40W	60W	75W	100W		
	New Halogen Incandescents  Save up to 28%	29W	43W	53W	72W		
	CFLs  Save up to 75%	9W	14W	19W	23W		
	LEDs  Save up to 77%	8W	13W	17W	N/A		



## 14 watt CFL



**\$58 Lifetime Savings**

over an incandescent with the same brightness

**Yearly Operating Cost - \$3.01**

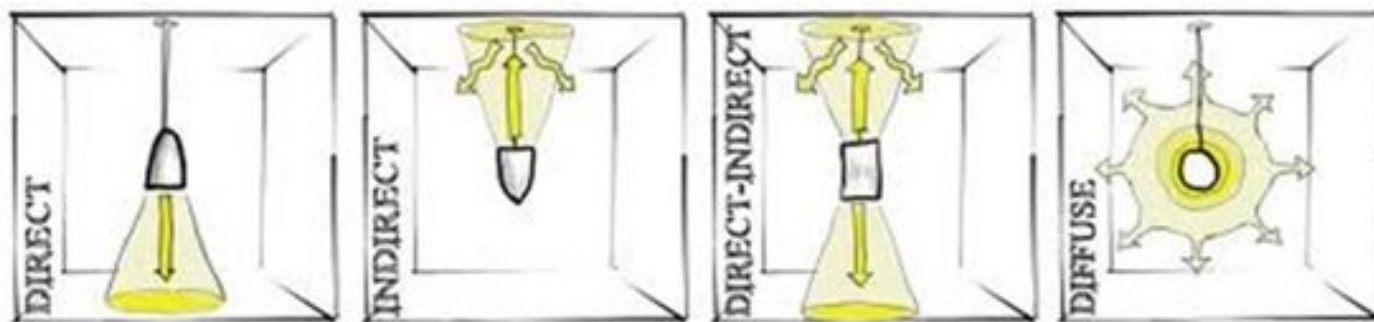
**Energy Usage - 14w**

**Brightness(Lumens) - 800**

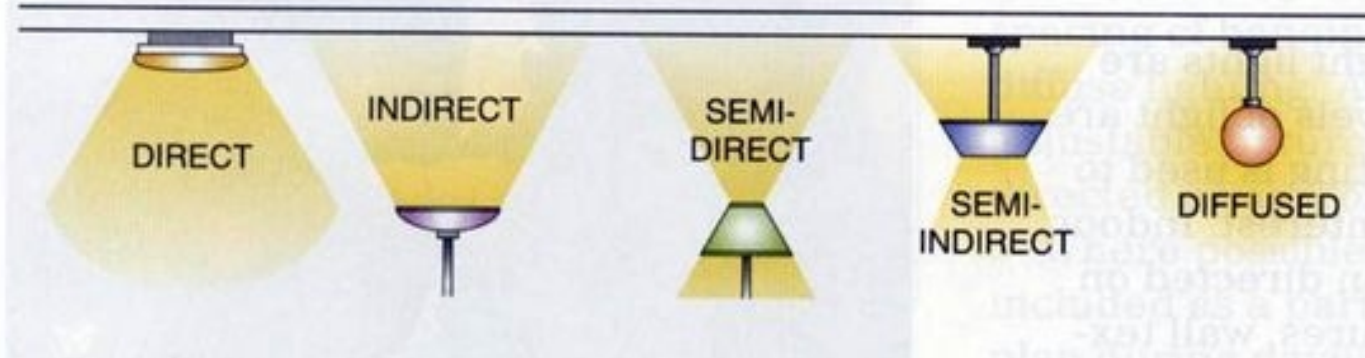
**Bulb Lifetime - 10,000 Hours**

War

T  
i



**Fig. 31-13 ■ Methods of light dispersement.**



# COLOUR TEMPERATURE CHART

**1000K**

Warm Flame



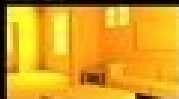
**1800K**

**10000K**



**1930K**

Candle Flame



**3500K**

Evening Light



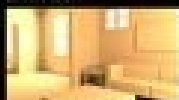
**7500K**

Day - Overcast



**2900K**

Incandescent (typical)



**5400K**

Sun - Overcast or Hazy



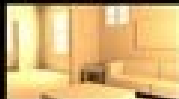
**8000K**

Midday - Overcast - Shade



**3000K**

Typical indoor lighting - 2700 - 3000



**6500K**

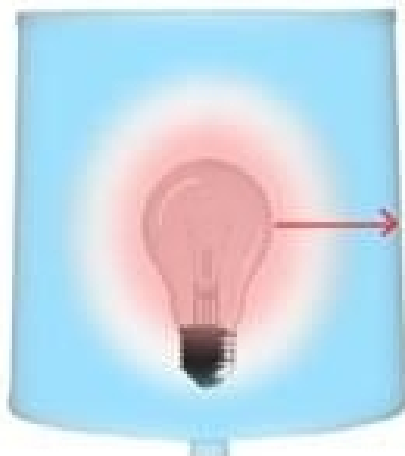
Sun - through clouds



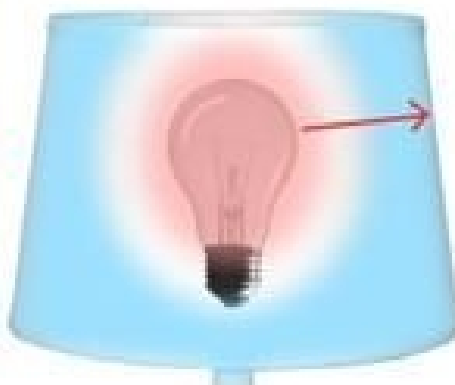
**10000K**

Daylight - cloudy day





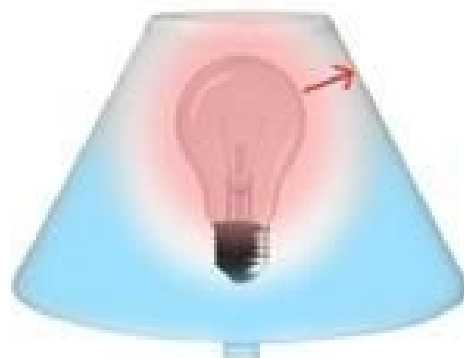
Drum/Cylinder



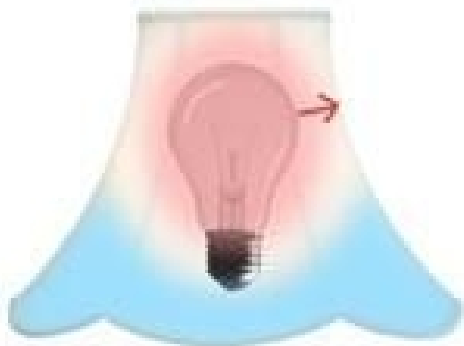
Floor



Empire



Coolie



Bell

Cathode -  
Anode +  
Marked by  
color or  
dots

DIODE

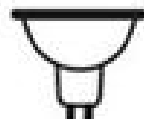
## Shop by Common Bulb Shapes



A Series



R/BR Series



MR16



Candelabra



G4



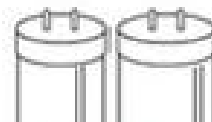
S Series



G Series



PAR Series



T8/T12

# Beam Angles



15 Degrees

24 Degrees

36 Degrees

60 Degrees

Warm White (3000k)

White (6000k)

Cool White (6500k)

Warm White (3000k)

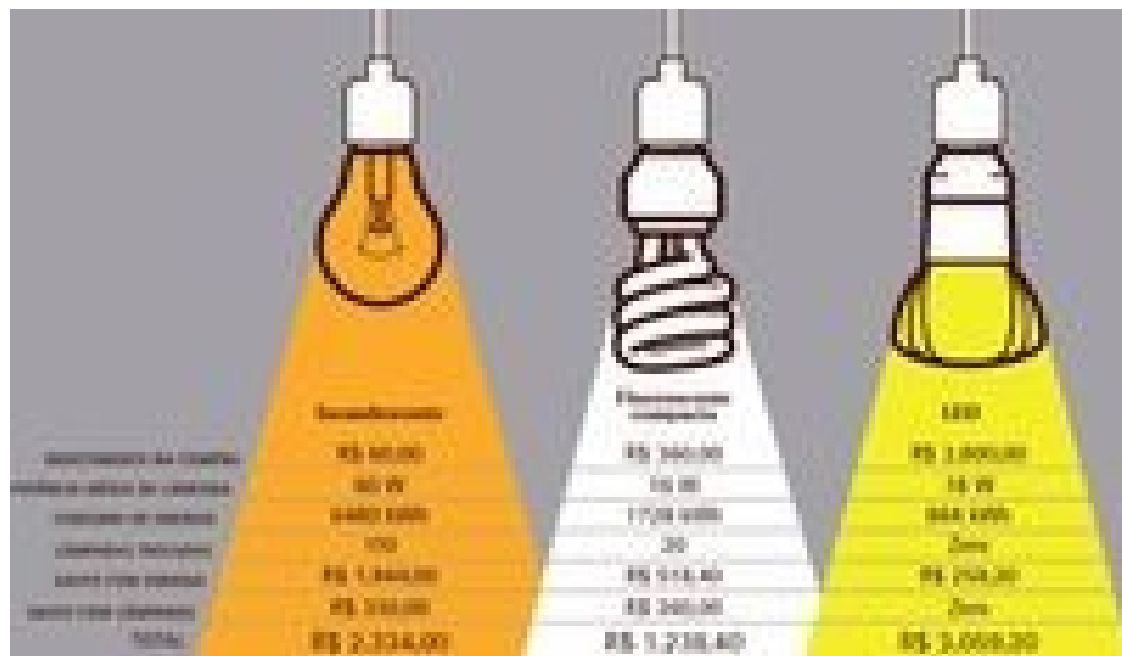
White (6000k)

Cool White (6500k)

Warm White (3000k)

White (6000k)

Cool White (6500k)







### Omnidirectional incandescent/GLS



#### Omnidirectional LED

	Watt	Lumen
	15	136
	25	249
	40	470
	60	806
	75	1055



### Directional mains-voltage halogen



#### Directional LED

	Watt	Lumen 90°
	20	104
	35	230
	50	345

